
DR. ROWLEY's
RATIONAL PRACTICE OF
PHYSIC,
IN FOUR VOLUMES.

VOL. IV.



THE
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RATIONAL PRACTICE OF
PHYSIC
OF
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ST. MARY-LE-BONE INFIRMARY, &c. &c.

IN FOUR VOLUMES.

VOL. IV.

CONTAINING

TREATISES

ON

THE CURE OF ULCERATED LEGS WITHOUT REST, &c.—THE PUTRID, MALIGNANT SORE THROAT.—THE CAUSES OF THE DEATHS OF CHILDREN IN SCARLET AND PUTRID FE-	VERS, &c.—MEDICAL ADVICE TO THE ARMY AND NAVY. —DIET, CONTAINING THE FOODS, &c. USED IN THE WHOLE WORLD.
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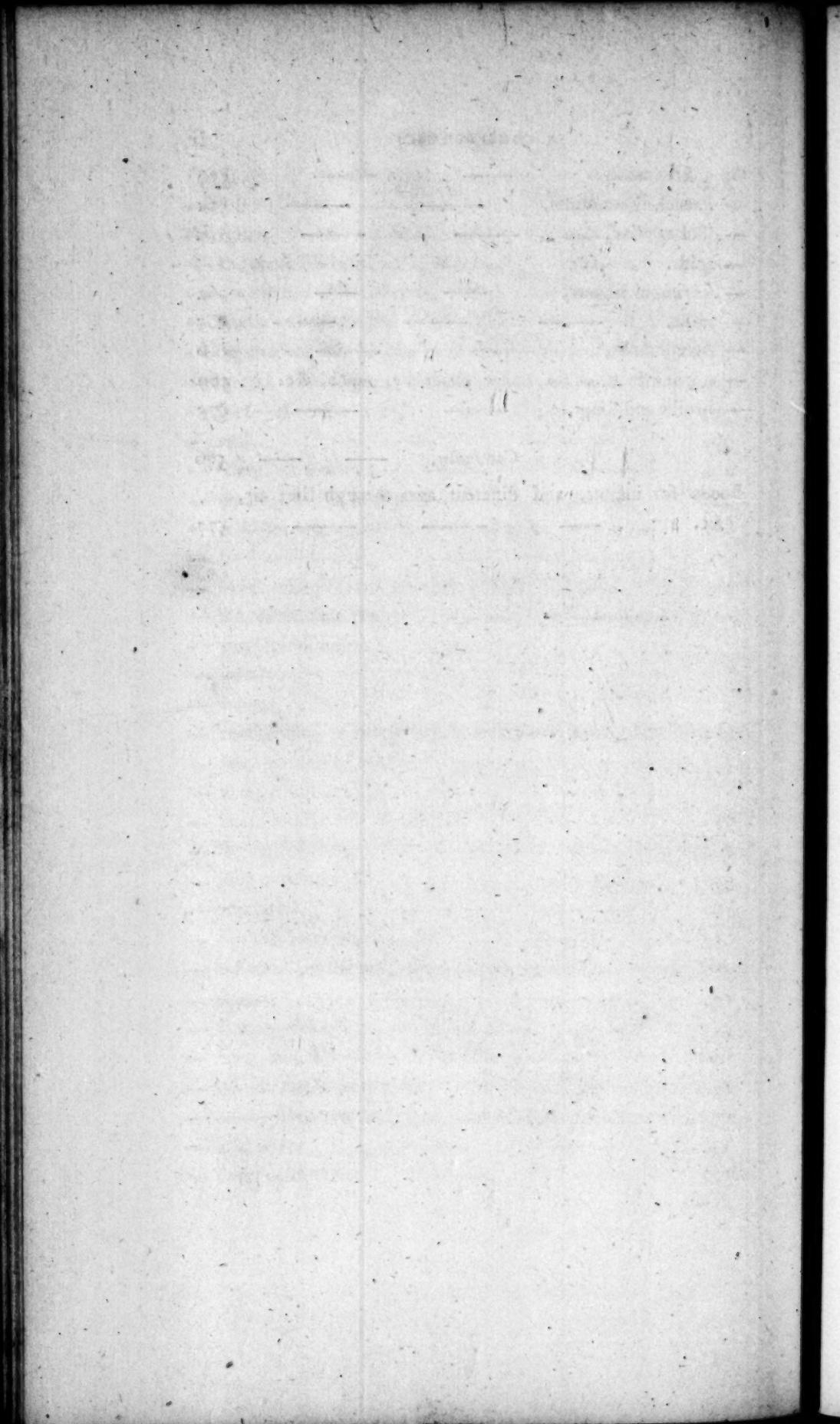
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INTRODUCTION.

AS the common treatment of ulcerated legs is often unsuccessful, and frequent relapses after a supposed cure the consequence, it is surprising no methods, superior to those in common estimation, have been adopted, to render their cure more permanent. Perhaps, servile obedience to an erroneous authority prejudices practitioners in surgery, and renders them inactive in the pursuit of improvements, easily attainable, by applying more studiously to the effects of internal remedies, in the cure of chirurgical diseases.

Various chirurgical cases might receive advantage from a judicious internal treatment, but none with greater certainty than ulcerated legs. The province of surgery being, principally, external dressings, or manual operation; the essential requisites for medical practice are too frequently neglected,

a few general medicines are applied without any precise regard to individual indications ; or, what is of greater consequence, contra-indications.

It is possible, by great industry, without extraordinary genius, to become eminent in *anatomy, chemistry, botany, midwifery, or natural and experimental philosophy* ; but not any one of these departments of art or science, taken singly, ever constituted an accomplished practical physician. It is the happy combination of the whole, joined with an ardent love for the profession ; long experience, and a superior capability of clear reasoning, that produce excellence in the healing art.

A circumscribed knowledge, therefore, should produce diffidence, it should study more or practise less : but the reverse is too commonly observed. Inferior and confined science, assuming the air of wisdom, determines with rashness, and supports error with clamorous obstinacy : while minds the most cultivated by learning, genius and meditation, suppose the possibility of human error ; they contemplate with caution, and conclude with modesty.

The

The prejudices of education are numerous in the art of medicine ; they are ingrafted, when the inexperienced mind is incapable of judging, and they often increase, unsuspected, with riper years. They sometimes appear to originate in the lectures of theoretical professors, who never, or slightly, practised the art : or amongst others of great practice, without a scientific and learned education ; for both are equally incapable of training young minds to useful knowledge. It is the junction of a true theory, experience and reflection, that gives solidity to the art. Every future day's observation should be exerted to discover and correct the errors of the former ; for prejudices are easily contracted, but with great difficulty eradicated.

Innumerable fallacies obtain present protection, and future support ; through an early and continued negligence in searching for truth. Indolent mediocrity perfectly satisfies the vulgar majority ; but mediocrity never produces any thing excellent. Its utmost bounds only expands to the peaceable attainment of doctrines already known, or received. To critically examine, or improve

the arts, to separate truth from conjecture, or hypothesis from demonstration, are objects much beyond the extent of its narrow comprehension : to flatter and be flattered in the grossest absurdities, is its highest ambition. Mediocrity, if ever roused to exercise its faculties, it is commonly in suppressing that superior excellence in others, which the confined limits of its own capacity, is incapable, or unwilling to comprehend. These subjects are more amply discussed in another work ; their causes are traced, and their baneful effects demonstrated.*

A prejudice has universally spread its influence amongst the chirurgical practitioners in this country, “ *that ulcerated legs should rarely be cured : they have been considered as a salutary drain to the constitution, productive of health and long life.* ” If such doctrines were true, mankind should be congratulated on the first acquisition of a stinking painful sore : the surgeons too, attached to these errors, might remain for ever in the undisturbed possession of a branch of practice ; which has always been considered extremely lucrative ;

* In the *Schola Medicinæ universalis nova.*

lucrative ; were not the ease and happiness of mankind superior to all other considerations.

These doctrines, it is hoped, have been clearly proved erroneous ; not only by rational arguments, but, what is far more conclusive, by innumerable facts of old patients cured after all the common methods had failed : the means, likewise, by which these salutary effects have been produced, shall be faithfully communicated.

The received methods of treating ulcers, it might be expected, had some conclusive and uncontrovertible authority for its basis. A doctrine so prevalent, maintained with such furious zeal, might be imagined to originate in a variety of indubitable facts. From the violent opposition any rational attempts to improve this branch of the healing art meets, an undiscerning spectator would conclude, thousands have perished by attempting the cure of ulcers, and that the history of medicine teemed with the dismal narrations of the unhappy sufferers. An impartial examination of the subject, however, will absolutely demonstrate the contrary.

In the prosecution of this enquiry, the Greeks, Romans, Arabians, and Moderns, have been carefully consulted; but not one self-evident proposition appears worthy of attention, in defence of the supposed dangerous tendency of curing ulcers; at least, not a single instance applicable to the new mode of treatment.

The doctrines, therefore, so universally established, so universally credited, have no decided foundation to support them, either ancient or modern. From whence did they originate? From Mr. Samuel Sharp, chiefly, before long experience had ripened his judgment. He was a genius of the first rank in surgery; but, perhaps, too precipitate in his decisions on medical practice. The just and high reputation he acquired in the former branch, rendered him too positive in the latter. Mankind, who cannot be judges of medical abilities, experiencing his admirable skill in operations, naturally concluded him equally excellent in every department of medicine. His treatise on operations was well written, and well received. An extensive practice afforded little leisure for future corrections; and

and his writings became an introduction to all the junior students in surgery. They read with avidity, and supposed his doctrines infallible. To separate truth from its semblance, requires more discernment than falls to the lot of students in general.

To give, however, the greatest latitude to the principles of the ingenious Mr. Sharp; let it be supposed, that in his defective methods of cure, that difficulty was experienced, and danger justly apprehended; yet it does not follow, that all other modes are equally exceptionable. The introduction of opposite modes of treatment may produce opposite consequences. What might be difficult or dangerous in Mr. Sharp's mode, might be the reverse with other practitioners, from a dissimilarity in the management of the disease. In Mr. Sharp's method, the causes of ulcers were never removed from the habit, but in the new modes they are; consequently, the supposed dangerous tendency of the former is probably removed by the latter. In the common methods the acrimonious state of the blood was little considered; but in the new, the blood is rendered

dered mild and balsamic. In the former, the original causes remaining in the constitution relapses were frequent, in the latter, the root of the evil is exterminated, and a return of the complaint without some violence, or accident, rarely happens. It will be clearly explained ; a vitiated habit of body is often the *cause* of the ulcer, the ulcer is likewise the *cause* of a vitiated constitution ; for an absorption of the morbid matter contaminates the fluids, and irritates the solids. Will a plaster radically cure any deprivation of the human fluids ? Certainly not. Is it not more rational to remove causes by skilful internal treatment ? The evil is deeply rooted, and superficial applications only procure temporary alleviation. Were it true, that old ulcers are dangerous of cure, which by no means is admitted, no surgeon asserts the same of a new ulcer. All ulcers have a beginning ; why not, then, cure ulcers before they become old ? The difficulty of removing ulcers is owing to an acrimonious, or bad habit of body ; remove the cause, and the effects will cease. Correct the bad habit, and the ulcer heals kindly. If this may be effected

fected in an old ulcer, which is beyond the possibility of doubt, why not use the same means when the ulcer is recent, and prevent all future objections to a cure.

Amongst many vulgar prejudices, a common assertion in every one's mouth is, "that ulcers must not be *dried* up; it is dangerous to *dry* up ulcers, the disorder will fly to some other part, and kill the patient."

This is the language not only of the common people, but likewise of medical practitioners; and if true, would merit a serious attention. If it can be proved extremely difficult to *dry* up an old ulcer, will it not appear highly irrational to find grave sober looking men ringing an alarm, and warning mankind of what seldom or rarely can exist? But it is often impossible to *dry* up an old ulcer by any means; therefore, any apprehension of an evil tendency, from what scarce ever happens, is supremely ridiculous. Through these false opinions, however, thousands must have suffered inexpressible misery for years, in various ulcers easily curable:

is

is not this disgraceful to the art, and shocking to humanity?

In treating ulcers, it is a universal maxim amongst ancient and modern surgeons, that three stages of cure are necessary, *deterging* or cleansing; *incarnation*, or filling up the loss of substance; *cicatrification*, or the skinning over an ulcer. Hippocrates pronounces above two thousand years ago, τάτε γαρ ελκεα, ην μεν ανακαθαιρυται πιω λουκω, ταχειν δεραπειμη δηλοι εαν δε μεταβαλλη ες τους ιχωρας, καιονει. Practical Surgery generally observes the same. In another place he delivers himself thus: Ιῆσαι δε τα ελκεα, ως κι τα εν αλλω ζωματι, αφγεγμαντα χρι ποιεσιν, και ανακινησιν και αναπτιμπλαναι και ες ατειλας αγειν. The principal object in Surgery is, to produce those successive changes by various applications in each particular stage. After the discharge of an acrimonious thin *serum*, what has been called *laudable pus*, succeeds, which flows while the wound incarns: Hippocrates truly says, πιον τροφη ελκεος. When the granulations of flesh have shot out to the surface, and the part, formerly lost, has been renewed, then the skin extends forth its fibres, and gradually covers the whole space.

To

To imagine a deep ulcer can be suddenly *dried* or cicatrised, while an acrimonious, fetid, or putrid ichor issues, is to suppose an impossibility ; it is contrary to all experience, reason, and ocular demonstration. If any remedies produce such *drying* effects, they must be either astringents or desiccatives ; but these are never prescribed for such purposes ; and, whoever will try their efficacy in any old or deep ulcer, would soon find, that not *drying*, but heat, pain and inflammation would be the consequence. No internal medicine can suddenly *dry* an inveterate ulcer. The whole supposition, therefore, about *drying* ulcers is indefensible, and is a mere vulgar error.* Hippocrates' remarks, Ελκος πελιον ηαι ξηρον, η χλωρον γηγομενον θαυματουν : but this is only delivered as a prognostic in *articulo mortis*, and has no reference whatever to the treatment of ulcers ; to which disease the father of medicine, who lived in a warm climate, amongst relaxed patients,

directs

* If the truth of these assertions is doubted, I pledge myself to produce numerous patients labouring under the misfortune of old ulcers ; in which cases, the total impossibility of *drying* ulcers may be fairly and demonstrably proved.

directs the application of the strongest astrin-gents, or drying medicines, as verdigris, alu-men, &c. The later Greeks, the Romans, and many imitating moderns, have pre-scribed similar methods ; sometimes in nor-thern countries, where, not relaxation, but callosity and rigid fibres attend the com-plaints. I have seen ulcerated legs at *Paris*, *Rome*, *Naples* and *Venice*, in the hospitals, which in general required the bracing plan of cure, owing to the warmth of the country, and relaxed habits of the people. At *Vienna*, and other parts of *Germany*, in *Flanders* and *Holland*, I have ob-served, sometimes one me-thod, sometimes another, necessary. The climate, the diet, air, and constitution of the people, therefore, should be more considered than any dogmatic systems of cure, which never will succeed in different countries. *Dif-fere quoque pro natura locorum*, says *Celius*, *genera medicinæ* ; *et aliud opus esse Romæ, aliud in Ægypto, aliud in Gallia*.

The apprehension of *diarrhœa*, *fever*, *difficulty of breathing*, or *asthma*, is equally erroneous upon similiar principles, especially if the new doctrines be pursued. Why should the mor-bific

bific matter fly to the intestines, to the lungs, or to the system in general, and suddenly prove fatal? To produce such effects, the morbid matter of the ulcer must be absorbed by the lymphatics, or by the minute veins;* it must be carried to the thoracic duct, and vena cava; it must mix with the blood, and fix its abode in the lungs; fly to the surface of the intestines, or produce a general irritation in the whole arterial system. What evidence is produced of such consequences, except by accident a fever has invaded the patient, and ulcers have become dry? But are such irrelative and fortuitous instances to establish general rules for practice?

That some of the ulcerous discharge may be slowly absorbed is indubitable; but after attending seriously to thousands of ulcerated patients, I solemnly declare, I have never seen one instance of those effects so universally credited, not even by the worst practice ignorance ever recommended. If the curing of ulcers, however, by the common methods,

* Perhaps the whole body is bibulous; but neither anatomy nor physiology has confirmed this supposition, though highly probable; yet it is known that the *tela cellulosa* communicates.

thods, had produced *asthma*, *fever*, or *diarræa*, where such diseases previously existed, such an objection can have no weight with the learned and candid, where patients have never had those complaints, and when a different method of cure is adopted, in which the constitution is changed.

In the succeeding treatise is communicated the ultimate experience of twenty-five years continual and extensive medical practice, as far as relates to the treatment of ulcerated legs, and some other morbid affections, arising from impurities, or depravations of the blood. The doctrines have not been founded on a partial or contracted knowledge of the subject, but from innumerable observations. General conclusions have not been drawn from accidental instances of success, as is too frequently the case in the introduction of many new, but transitory remedies.

It is reiterated trials and long experience, that should either establish or condemn all attempts to improve the healing art. Failures have sometimes accompanied the most promising expectations; while chance, fortune, or accident, have illuminated what eluded

cluded the most penetrating and sagacious mind ; yet every attempt at improvement merits some degree of approbation. Facts of cures performed should alone determine the *modus curandi* ; these once established, a contemplation of the causes follow ; then by analogy, physiology, and the application of different doctrines, new discoveries present themselves of the most beneficial tendency to society. The following improvements originated in an attempt to remove diseases, which prejudice* considered difficult or dangerous to cure, from a suspicion, that the received principles were erroneous ; and the event has amply proved the suggestion true. The cure of ulcerated legs, and the administration of mineral and saline alteratives in very small doses, at certain distances of time, without irritating the habit, were the primary objects ;

* The first attempts were at Belleisle in the year 1761, soon after its capture by his Majesty's forces. The methods were afterwards tried in the West-Indies ; at Jamaica, Havanna, America, &c. but they did not cure in hot countries ; yet bark and bracers succeeded. The three former editions on ulcers, contained cases which are now excluded. For other improvements, see the treatises on diseases of the eyes, breasts, in hot climates, &c. &c.

objects ; but an extension of those theoretic ideas, which appeared rational, and were confirmed by success, were gradually applied to the scrophula and cancer. An ardent desire, at a very early period of life, at the age of seventeen, to improve our excellent art, prompted the undertaking; success attended the first uncultivated efforts excited, and encouraged remoter pursuits, under inexpressible difficulties, and the most formidable opposition; but the public received benefit, and the public afforded a generous protection. The innumerable opportunities of determining any new discovery by positive facts, in this great city, is always obtainable by the industrious. Those practitioners who admit the inferior ranks of people constantly at their houses, free of expence, acquire immense experience, gratify the feelings of humanity, and render the art, what it ought to be, a blessing to society. To the younger physicians and surgeons, it is earnestly recommended to adopt, early in life, some benevolent institution of this nature ; for it will enrich their knowledge, and add true dignity to the healing art. Unconfined to the precise

cise *routine* of hospital practice, the mind has free liberty to expand, and avail itself of the objects of mercy that offer. Dangerous experiments, indeed, should be always avoided, for the art should be rendered more excellent by the safest means. To the studious, incontrovertible demonstrations often follow well-conceived opinions.

This introduction, and some parts of the treatise, are not only connected with the cure of ulcers, and other complaints arising from an impure state of the fluids ; but they likewise contain many reflections on medicine. If any expressions should appear too animated, it is hoped they will be attributed to their true cause, a warm desire to serve mankind without any intentional offence. The thoughts are delivered with that freedom, an immense experience in different branches of medicine for thirty years, and medical travels in most parts of the world, may, in some measure, justify. Prevailing prejudices are censured, not with that degree of complacency, perhaps, which readers of a certain class expect : but it should be considered, the eradicating of erroneous principles is the surest road to

future amendment. Men, habituated to a faithful and implicit observance of old doctrines, however false, bear with impatience any attempt to convince them of error. Accustomed in infancy to receive resemblances for realities, or opinions without demonstrations; and having passed, perhaps, a long life in error, they are exasperated by an overthrow of their favourite systems. The mysterious oracles of indolent tranquillity, and specious deception, must not be profaned with impunity by the sacrilegious hand of innovation:

*—Namque hoc tempore
Obsequium amicos, veritas odium parit.*

The more successful any improvement is, by so much the more fury it is opposed, as the history of medicine fully testifies in the examples of mercury, bark, antimony, inoculation, &c. Every instance of an extraordinary cure reflects dishonor on the unsuccessful, and rarely fails of exciting, in envious minds, private opposition at the expence of honor, integrity, and truth: yet the criterion

of medical skill should be founded in fortunate cures, not specious verbal professions ; *nam non eloquentia, sed remediis morbi curantur.* Improvers of arts are commonly treated with ingratitude ; and, though mankind privately avail themselves of discoveries, they commonly abuse inventors. Calumny and detraction have been, and probably ever will be, exercised against every attempt to improve medicine, particularly in large cities, where men frequently become jealous competitors for extensive practice. Errors, however, should be discovered by facts and reasoning, before their removal can be effected ; but those, who either through interest, indolence, or ignorance, pre-suppose non-existing, will never labor in their detection. A physician, therefore, should be a good logician, or he may be as incapable of perceiving truth, as in detecting falsehood : he should constantly carry contemplation into practice, and practice into contemplation. How many chimeras have been propagated and credited, from an unacquaintance, or neglect, in the art of reasoning ?

Those who have arrived at the summit of knowledge and perfection, or who are satisfied the art requires no improvement, neither the foregoing nor succeeding sentiments are intended ; nor is it requested, any one should have common sense, contrary to his inclination. If junior practitioners, as yet untainted with delusive systems, receive any benefit from these observations, it will afford the highest satisfaction. They may candidly try the modes of treatment, which have at least safety and mildness for their recommendation ; but this cannot be pronounced of many destructive poisons lately introduced. *Arsenic, lead, cantharides, deadly nightshade, aconitum, henbane, hemlock, digitalis, dulcamara, &c. &c.* have been so liberally and inconsiderately prescribed internally, in all cases and constitutions, that one might be led to conclude, the *materia medica* contained nothing to cure diseases, except powerful poisons. The healing art, sacred to humanity and wisdom, thus becomes a scourge and pestilence, inflicting death on the innocent patient, under the direction of caprice, fashion and folly, without any fair trial of well-

well-known efficacious remedies. One is thrown into excruciating tortures, and deadly convulsions by *arsenic*; another rendered senseless, torpid, or paralytic, by *lead*; another has a suppression of urine, convulsions, or bloody urine, and a painful death by *cantharides*; another suffers similar symptoms by the *aconitum*, or other acrid vegetable poisons; another falls into stupidity, his lower jaw suddenly drops motionless, and death ensues by *bemlock*; another in an asthma is sent to eternal sleep by *opium*. Instances of all the above circumstances have been lately, as well as formerly, demonstrated; not to mention injuries rendering life unsupportable, where the poisons have not divested the unhappy victims of life. But are such practices, by the laws of humanity, or the healing art, justifiable? Are dangerous experiments to be admitted, while an abundance of excellent and safe remedies are easily obtainable? For, supposing even cures could be produced by the hazardous use of acrid poisons, it is certainly unfeeling to run any risk of destroying life on superficial conjectures, or out of complaisance to the reigning fashions, or
dangerous

dangerous projects of a German court physician, or other unthinking practitioners.

If the new discoveries, here communicated without reserve, be received with candor, there may remain some hope that mankind will ultimately receive the benefit of those labors, which have long been dedicated to their service. The *modus operandi* of mineral alteratives shall be the subject of a future essay, in which some *Boerhaavian*, and other modern doctrines, will be fully refuted. I may conclude with Sir William Temple, that

“ I never had written any thing without the
“ intention of public good. Whether I have
“ succeeded is not my part to judge. Good
“ intentions are at least the seed of good ac-
“ tions ; and it must be left to the soil and
“ the seasons what may be the produce.”—

*Conscius sum mibi quantum mediocritate valui,
quæque antea scierim, quæque operis bujusce
gratia potuerim inquirere, candide me, atque
simpliciter in notitiam eorum, si qui forte cog-
noscere voluissent, protulisse. Atque id viro
bono satis ej̄t, docuisse quod scierit.*

QUINCTIL.

TREATISE

ON

ULCERS OF THE LEGS, &c.

THE most common and authorised practice, in the cure of ulcerated legs, is to insist on *rest*, and an *horizontal* position; at the same time purges and other remedies, according to the circumstances of the case, are universally given. It is not uncommon for some patients to undergo salivation; by which methods, and proper dressings, many receive a temporary cure. To prevent a relapse (especially in those ulcers which have been of long standing) it is usual to produce an artificial discharge, by means of an issue: but in general, those persons who are exposed

posed to any laborious exercise, seldom experience the cure to continue sound; for the causes of the complaint not being eradicated by proper medicines and diet from the constitution, on using their former exercise the ulcer commonly breaks out again.

This is well known by hospital surgeons as a fact, who often receive the same patients annually. Whoever will examine a number of these cases relieved in the above methods, which is the common practice of the hospitals in general, will be well convinced of the truth of what is advanced. The following quotation from Mr. Sharp, will give a perfect idea of the present mode of practice, in the cure of ulcerated legs. “ Bleeding and “ other evacuations will be serviceable, and “ above all things *rest*, and a *horizontal position*; which last circumstance, is of so “ great importance to the cure of ulcerated “ legs, that unless the patient will conform “ to it *strictly*, the skill of the surgeon will “ avail nothing; for as the indisposition of “ these sores is in some measure owing to “ the gravitation of the humors downwards, “ it will be much more beneficial to lie “ along,

“ along, than to fit upright, tho’ the leg be
“ laid on a chair, since, even in this posture,
“ they will descend with more force than if
“ the body was reclined.

“ Ulcers of many years standing are very
“ difficult of cure, and in old people the cure
“ is often dangerous, frequently exciting an
“ *Asthma*, a *Diarrhœa*, or *Fever*, which de-
“ stroys the patient, unless the sore breaks out
“ again; so that it is not altogether advisea-
“ ble to attempt the cure in such cases, but
“ only the reduction of them into better order
“ and less compass, which if they be not
“ malignant, is generally done with *rest* and
“ proper care. The cure of those in young
“ people may be undertaken with more safe-
“ ty, but we often find it necessary to raise a
“ salivation to effect it, tho’, when completed,
“ it does not always last, so that the prospect
“ of cure, in stubborn old ulcers, at any time
“ of life, is but indifferent.”

Bleeding and other evacuations are cer-
tainly serviceable in the cure of ulcers of the
legs in plethoric constitutions, and inflam-
matory cases; but a variety of circumstances
constantly occur, which require a different
and

and opposite treatment ; therefore bleeding and evacuations, if too generally applied, might do mischief. Operating surgeons do not always study deeply the science of medicine, and therefore are not competent judges to answer its various purposes in practice ; of course, such should be more cautious in prescribing than they generally are, and likewise more circumspect in forming a judgment on the medical improvements of others.

Mr. Samuel Sharp was a most excellent and humane surgeon ; his works on observations, taken generally, are superior to any this country has produced ; but whoever, possessed with true medical science, examines his pharmaceutic remedies in surgical cases with unprejudiced judgment, will have little reason to extol his scientific knowledge in this useful branch ; the same observation will be often applicable to many of the most skilful operating surgeons. If, however, well-educated surgeons would apply to the study of medicine, they may, undoubtedly, become very skilful physicians : for the very essence of all physiological reasoning being principally founded in anatomical demonstration,

with

with which every surgeon should be intimately acquainted, it follows that a surgeon, by early application, and a close attention on the sick in hospitals, may become very expert in medical practice; but a neglect of these advantages renders a surgeon's knowledge very circumscribed, except in his own particular department. Hence the branches of medicine mutually assist each other; manual operation belongs to surgery, rules of diet, and the direction of internal remedies, arising from deep reflection on causes and effects on the human constitution, are the immediate considerations of practical physic. A partial knowledge, however, cannot answer the important objects of medicine in any branch; it is an extensive attainment of the whole science, which alone can qualify a man for practice, and every surgeon thus accomplished, is, in reality, a physician; though he may not have passed the regular forms of education, or have a degree.

As to *lying in bed during the cure*, (with all respect due to a practitioner of such great merit) I must beg leave to be of a contrary opinion, for the reasons before-mentioned, i.e.

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the patient, after keeping his bed two or three months, by the assistance of the common remedies, or salivation, the ulcers are supposed to be cured ; but on using exercise, they most commonly return to their former painful state, and render patients fully as miserable as before the cure was attempted. This is a principal objection to the common mode of practice, but in the methods of cure which have proved successful for twenty-five years, the patients are very rarely liable to a relapse, because they are ordered to use moderate exercise during the cure, and, by internal remedies, the causes of the obstinate complaints are attempted to be removed.

Mr. Sharp's doctrine is equally erroneous, when he asserted, probably from a blind obedience to authority, fashion, or from observation of his own defective methods of treatment, “*that the cure in old people is so very difficult, or that it produces asthma, diarrhoea, or fever, experience, in a multipli-*“ city of such cases, proving directly the “contrary.” Such a doctrine might have been formerly an excellent stratagem to cre-

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ate annuities at the expence of patients, but had little foundation in truth. If numberless facts, drawn from long experience of patients having been radically cured of old ulcers, from the age of fifty, to seventy and upwards, may be admitted as demonstrations against a visionary hypothesis ; so many might be produced, as would infallibly overthrow the doctrine, and convince the unprejudiced, that it was founded in absolute error. If, beside the happiness of old painful ulcers being radically cured, it can be clearly proved, the constitutions of patients have been considerably amended, by correcting the vitiated state of the blood, and that neither *diarrhoea*, *fever*, or any other diseases are the consequences of the cure ; it will require very little reflection amongst humane and sensible practitioners in medicine to determine, whether old and false doctrines should not be abolished, and new facts and demonstrations, if true, universally established and pursued.

The reducing ulcers into “ better order and “ less compass, by means of rest and care,” can answer very little purpose, unless the

patient

patient should keep his bed during life, which remedy most will think worse than the disease ; however, these rules so positively laid down by Mr. Samuel Sharp, have proved an excellent excuse for the inefficacy of the common practice, and deterred many surgeons from attempting the cure, in old people in general, and very frequently in other cases, where the cure might have been easily effected, without any inconvenience whatever to the patient. The doctrines of Mr. Sharp should seem only applicable, where an *asthma*, *diarrhœa*, or *fever*, pre-existed. Salivation, in these cases, is very absurd in general, and even cruel, were the case venereal ; for such a powerful mercurial course will greatly weaken and relax the most athletic and strong ; in the more tender and delicate constitutions, the effects might be dangerous ; but what renders this practice still more disagreeable, is, that it does not in general *prove successful* ; this Mr. Sharp himself acknowledges. I have seen a number of patients salivated in these cases, and to all appearance cured ; yet, in a short time after, the sores have broken out again.

and the patients have been under as unhappy circumstances as before the cure was attempted : besides, the constitution has been destroyed, in a great measure, by this fruitless and unsuccessful attempt : which in some instances, no means whatever, after this severe course, could repair.

The procuring an artificial discharge by opening an issue, notwithstanding it is almost universally prescribed, may be safely excluded from practice, if the methods of cure hereafter recommended, be candidly pursued. The trifling discharge of an issue is very inconsiderable ; though many of the profession are of opinion, something very essential is obtained by this means. It is imagined, when an old ulcer is cured, the constitution has been so much used to a discharge, that unless we assist nature by an issue, there will be a translation of matter to some more noble part, as the *brain*, or the *lungs*, &c. it likewise prevents their breaking out again. These opinions, though very common and plausible, are produced from false theory, or arise from the defective modes of treatment. I have never known, a single instance of

of any accident happening after the cure of ulcers, in thousands of cases, the major part of which had been unsuccessfully treated at our hospitals in town ; but the new methods being opposite to those in common use, may, in some measure, account for this. Besides patients in general cannot be happy, for sometimes the pain occasioned by the issue, is equal to the ulcer when in its worst state ; in which case, it must be immaterial to the patient, whether he have the ulcer or the issue to torment him. Numerous observations on the practice of others prove, that issues do not answer the end expected ; for the ulcer has relapsed. If an issue could be of service, I would advise it to women after the cure, between the age of thirty-four and fifty, for reasons so obvious to practitioners they need not be mentioned. If, however, a compliance with the practice of making issues on these occasions renders patients happier, as issues cannot do mischief, let them enjoy this supposed relief. I must declare I have never used them after the cure of old ulcers ; and am quite convinced of their insignificance, unless

unless in those constitutions that have a dropical tendency.

Some surgeons, considering the ulcer of the legs a *local* disease,* suppose the constitution of the patient not affected. If by the term *local*, they mean a disorder affecting any particular part, as the legs, the breasts, the lips, or any other part of the body, without its producing any change or effect whatever in the general constitution, it is denied that ulcers of the legs, or any other part, are *local* diseases of this class. If they mean only an *external* disorder, it is denied that any external complaint, discharging a foetid, acrimonious, or purulent pus, can exist without contaminating, in some degree, the general habit: hence the application of ointments, dressings, bandage, or any other external means, which belong to the department of surgery, will not securely eradicate a disease ravaging in the constitution, and of which the ulcer is sometimes evidently a mere symptom.

If

* The definition of *local* should seem to be, a disorder of any part or place of the body, independent of the general habit.

If an anatomist, dissecting a putrid subject, should receive the slightest scratch by any putridity from the subject he dissects, the misfortune frequently terminates, by a putrid fever, in death.

If the matter of the pustules from the small-pox be applied to a small puncture, the disorder is received, and produces its regular stages in the constitution.

If a puncture, even by the eye of a needle, be received in the finger or thumb, and the person should have a virulent gonorrhœa, and indiscretely press the affected part to examine the state of the discharge; the consequence has been an inflammation of the lymphatic vessels of the arm, and a tumor of the glands of the arm, or axilla.

Midwives have received the venereal infection by a scratch on the finger.

Fevers of the most malignant kind in the West-Indies, I have known to be communicated from a scratch in the finger, with which the pulse has been felt.

It is proved that garlick, oil of turpentine, and other things of a peculiar odor, when rubbed on the feet or hands, will sensibly

sensibly affect the breath, and the smell of the urine.

Several subtle poisons, from the bites of animals, and mercury, are conveyed into the habit, by means of the absorbent system.

All these, and many other effects, arise from the absorbing power of the absorbent vessels.

If such evident effects are produced by things injurious, and others merely innocent, it naturally follows, that,

The acrimonious matter of a scorbutic or scrophulous ulcer, may send into the habit some of its irritating fomes.

That a putrid ulcer may carry into the human constitution some of its putrid effects.

That a venereal ulcer may transmit some of its virulence into the habit.

That a cancerous ulcer may convey, by similar means, some of its dreadful corroding qualities, and produce an hectic fever.

That abscesses and ulcers may be produced by an absorption of the matter causing the small-pox, venereal disease, or even putrid malignant fevers and pestilence.

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If, therefore, the preceding facts be strictly true, which will be acknowledged by every learned and unprejudiced man in the profession, what doubt can remain of the possibility of an absorption of some part of the ulcerous discharge into the constitution? It must therefore appear, whatever vitiated change in the constitution be sufficient to produce an ulcer, and continue its effects for years; that the matter of the ulcer, in its turn, may vitiate the whole habit; and thus, by a reciprocity of action, from the ulcer to the constitution, and from the vitiated fluids to the ulcer, the effects may continue, and this reasoning, perhaps, explains the cause of ulcers remaining so many years.

If the preceding reasons be not sufficient to convince mankind, and nothing but the most determined obstinacy or ignorance can deny their rationality: other reasons might be adduced, which may add weight to those already advanced.

Ulcers create pain, and pain produces uneasy sensations in the mind; a perturbated mind will disturb the natural functions of the body: hence arise indigestion, feverish heats,

and

and a vitiated chyle ; from a vitiated chyle, an acrimonious state of the blood ; and from these sources, all the functions, *animal*, *vital*, or *natural*, may, in various degrees, be changed from a sound state ; and if the absorption of any acrimonious, purulent, or putrid matter be added, who can be so blind as not perceive, that the constitution may materially suffer, under the affliction of what may be called a *local* disease ; and that remedies administered to remove the cause from the constitution, must be the most rational mode of proceeding ? But what should confirm the whole reasoning is, that it has been acknowledged, a perfect cure is not experienced by the common methods : yet changing the constitution by diet and remedies, has proved, in numerous instances, a radical cure ; not only of the ulcer, but has rendered the patient's habit ever after healthful.

The cure of ulcers, therefore, cannot rationally be attempted by any narrow, confined mode ; but should be accommodated to many circumstances of age, season of the year, particular diet and constitution of each individual, a consideration of
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the causes of the disease, its effects, and consequences; the judicious choice of medicines, dressings and bandage, all which shall be explained in the subsequent part of this treatise.

Of Ulcers in general.

A solution of continuity, with loss of substance, in any part of the body, discharging pus, ichor, or fancies, is called an ulcer.

An ulcer is either simple or complicated.

The *ulcer*, denominated *simple*, originates in general from some external injury; as confusion, abrasion, excision, or corrosion.

The *complicated ulcer* arises from some disease already in the constitution; as the marine or land scurvy, rickets, the dropsy, the scrophula, lues venerea, or cancer. A simple ulcer, likewise, from internal causes, may become complicated. The simple recent ulcer, therefore, may be termed idiopathic; the complicated ulcer symptomatic.

On the Causes of Ulcers.

The recent simple ulcer has no very remote cause, as it arises from some sudden accident;

accident: but the complicated ulcer has many different and remote causes, according to its particular species. The proximate, or immediate causes of ulcers, are the laceration, excision, or corrosion of a greater or less number of minute vessels, from the open mouths of which, serum, pus, ichor, or sanies are discharged.

Of the Seat of Ulcers.

Ulcers are commonly seated in the *tela cellulosa*: * an ulcer may therefore extend to many different parts of the body, and be superficial, or remotely seated, may pass through the interstices of many muscles, or not penetrate much deeper than the cutis.

Prognostics of Ulcers.

All simple ulcers, in their first appearance, may easily be cured. There would not be

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* The ulcers of the viscera may, in some measure, be excepted, but even in these cases, as it has been demonstrated, the viscera themselves are composed of the *tela cellulosa*, ulcers of these parts may exist in the *tela cellulosa*. From the communication of the *tela cellulosa*, purulent matter has passed from the thorax and abdomen to the extremities.

Vide Physiolog. Halleri, Tom. I.

an old ulcer, were the disease managed judiciously in its primitive state.

To suffer a recent ulcer to become inveterate, is a disgrace to the medical art : but this arises more from the neglect of a skilful internal treatment and regimen, than any real difficulty in the cure.

Complicated or old ulcers are more tedious in cure ; but these are safely healed by removing the causes from the constitution which gave them rise : such are generally the sea or land scurvy, scrophula, lues venerea, or any other disease which contaminates the fluids.

On the Cure of Ulcers.

The cure of all ulcers depends on a good digestion, incarnation, and sound cicatrification.

These three stages of cure are frequently produced by the operations of nature, joined with simple dressings, in recent ulcers ; but a skilful application of various modes of diet and remedies will alone succeed in removing the complicated, or old ulcer.

Diet,

*Diet, Remedies, and Dressings, necessary in
the simple recent Ulcer.*

In plethoric constitutions, bleeding, saline purges, and a moderate abstinence, particularly from liquids, are to be prescribed.

In *lax* habits, evacuations, or saline remedies would be improper; in which instances *tonics* may be useful. A dry diet is absolutely proper in both cases; for as the increased effusion of pus, ichor, or fancies, will depend much on the vessels being *distended* by fluids; so the *diminution* of the contents of the vessels will diminish the inflammation, the increased action of their coats, and allay irritation. The inflammatory stage of simple ulcers being removed, a glutinous pus succeeds, the ulcer daily incarns, and at last is cicatrised, or skinned over.

Simple recent ulcers, whether superficial, or deeply seated, even with some trifling indisposition in the habit, are speedily cured by

Bleeding, in plethoric constitutions.

Saline purgatives once or twice in the week.

Nitrous

Nitrous drinks.

Proper dressings and bandage.

An abstinence from liquids in a certain degree, and by avoiding all salt, acrimonious, or stimulating diet.

No. 1. Rx. Sal. Glauber. vel. Rupel. 3vj. solve in infus. sena
3ij. bis in septimana sumendus.

In robust habits, or amongst porter or ale drinkers, a stronger purge is necessary.

No. 2. Rx. Pulv. jalap. gr. xv. vel 3j.

Sal. nitr. pulv.

Crem. tart. aa. 3f. M. semel vel bis in septimana sumendus.

In more delicate habits.

No. 3. Rx. Infus. sen. 3ij.

Tart. solub. 3i. M. f. haustus, semel, vel bis in septimana sumendus.

In females, where the menses are obstructed, or in pallid habits,

No. 4. Rx. Pil. ex colocynth. cum aloe 3j.

Calomel. ppt. gr. ij. M. accurate, f. pilulae No. vij.
capiat j. vel. ij. alternis noctibus.

For a common drink to the plethoric.

No. 5. Rx. Emulsionis commun. 3j.

Sal. nitr. 3j. M.

No. 6.

No. 6. Rx. Sal. nitr. vel. prunell. ʒss. solve in aq. pur libij. capiat coch. ij. vel iv. ter de die.

In habitual costiveness,

No. 7. Rx. Elect. lenitiv. ʒiis.

Crem. tart. pulv. ʒiij.

Pulv. rad. jalap. ʒj. syr. simp. q. s. f. elect. cuius
capiat. Q. N. M. semel vel bis de die, vel ad
libitum, in constipatione.

In constitutions of a dropsical tendency,
with a very dry diet may be given.

No. 8. Rx. Pil. ex colocynth. cum. aloe ad gr. vj. vel
Elect. e scammon. ad ʒss.

As gentle laxatives, where no considerable evacuation is necessary, oil and manna, lenitive electuary, lac sulphur and magnesia, or tremor tartar, sal Polychrestus, or Tartarum solubile, and such like remedies, may be recommended, merely to prevent or remove constipation.

In cachetic habits, aloetic preparations, mercurials, or antimonial and mercurial alteratives, may be given in small doses, at proper distances, the *pulv. mineralis*, or chalybeates.*

* A composition of æthiops mineral, and sal nitr. equal parts, well rubbed together,

In very lax habits, where the circulation is languid, bark and other tonics are useful.

The external Treatment of recent and simple Ulcers.

In these ulcers, a surrounding inflammation is a common symptom.

For which, emollient fomentations and cataplasms are to be applied.

UNGUENTUM EMOLLIENS.

No. 9. Rx. Ol. mucilag. recent. vel ol. oliv. opt. ℥ss.
Sperm. ceti ʒij. vel ʒiſſ. f. unguentum secundum
artem.

This ointment, which is very simple and emollient, may be applied to any part swelled, or inflamed, twice in the day. The vegeto-mineral water is likewise useful. If, after some days, a well-digested matter should not issue, which is a sign of acrimony in the constitution, to the ulcer itself may be applied,

No. 10. Rx. Merc. præcip. rub. bene lævигat. ʒij.
Ung. ex. alth. vel cerat. alb. ʒij. f. unguentum;
parum cuius parti affectæ applicandum ope lintei
carpti, semel vel bis de die.

From

From a thin discharge, a thick glutinous pus succeeds; new red granulations gradually fill up the space of the substance formerly lost, until the surface of the ulcer is even with the skin, in which case the *ceratum epuloticum* is proper to cicatrize the sore with light compresses.

If the case be obstinate, internally may be given remedies to correct the bad habit; or, in future, the ulcer may become habitual.

The causes, therefore, in the constitution should be first ascertained, why the ulcer does not heal: for these being clearly discovered, the cure of any recent ulcer will not be difficult. The ulcer, however, continuing unhealed, is to be considered complicated.

On Exercise in the Cure of Ulcers of the Legs.

The constant practice in hospitals, it has been observed, is, to oblige patients to lie in bed during the cure of ulcerated legs; but on using exercise, after this mode of treatment, the skin frequently breaks, a discharge issues, and a relapse of the ulcer is the consequence.

Ulcers

Ulcers of the legs commonly are seated upon, or near the *tibia*, frequently a little above the ankle; in which situation moderate exercise has always been recommended, during the new methods of cure; at the same time internal remedies, and a proper diet, adapted to each individual, are prescribed. Common sense, and a little reflection, unassisted by deep medical science, must perceive the utility of exercise when the cure is performing; for ulcers healing while exercise is used, will be in no danger of relapsing; on the contrary, where lying in bed has been persisted in a considerable time, on suddenly proceeding to muscular motion, the disease has frequently returned.

There are, however, circumstances in which rest may, for a certain time, be necessary; in violent swellings and inflammations, or if the ulcers should be seated on the superior part of the *tendo Achillis*, or on the *Gastrocnemii* muscles. The abbreviation and extension of these muscles are very considerable, and cause no small friction in the cellular substance covering them, which is the seat of the ulcer: therefore, during the incarnation
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of ulcers thus situated, the exercise should be very moderate; but when the ulcer is nearly in a state to cicatrize, more exercise may be prescribed, to prevent the cicatrix forming itself into a contraction.

Ulcers are certainly healed by rest and the horizontal position, much sooner than where exercise is prescribed. The elongation of the minute vessels, and the tender fibrillæ, forming the granulations, which fill up the space occupied before by the ulcer, are less disturbed: but a cessation of all muscular motion, the warmth of the bed, an increased sensible, or insensible perspiration, all contribute to render the muscles relaxed, and the fibres of the *tela cellulosa* flaccid; from hence the leg frequently diminishes in size. The ulcer incarving during this diminished and relaxed state of the limb, is probably the cause of the relapse. The muscles, and other parts, which had been debilitated by a continuance in the warm bed, on returning again to their usual motion, gradually resume their former tone, the circulation of the fluids is increased, the lax flaccid parts become daily firmer, the cells of the *tela cel-*

lulosa are more distended, and the limb acquires its former dimensions: but the lost substance constituting the ulcer having been repaired during the relaxed and diminished state of the limb, the new tender parts cannot sustain the shock of an unaccustomed friction, pressure and distention. The tender fibrillæ, by being over-stretched, become lacerated; the skin breaks, and the cause of the former ulcer not having been eradicated, the disease gradually returns to its former disagreeable state.

In the new mode of treatment, where moderate exercise is recommended, all these consequences are prevented: for the leg performing its usual motions, and the wound healing up at the same time, the new parts supplied become daily accustomed to various friction, pressure, or distention, and heal up so firmly, that no future exercise will lacerate the fibrillæ of the regenerated flesh; nor will any thing but some external violence, or fever, re-produce the ulcer. In the former mode of proceeding, there seems a looser cohesion of the regenerating particles; in the latter,

latter, a more compact and firmer attraction and coherence, after the cure is completed.

On the Use of Bandage.

While ulcers are incarning a simple roller is the best bandage: in the winter, it should be made of soft thin *flannel*, and in the summer of thin *calico*, or *linen*. The breadth of the roller should never exceed an inch and a half, or two inches.

If there should be a varix of the veins in conjunction with the ulcer, the whole leg should be rolled up to, or above the knee.

In rolling, some skill is required; it must be accommodated to the shape of the limb; so that the roller should lay smooth, and press equally on all the parts rolled.

In *varices* of the veins, the leg, but not the ulcer, may be moistened, previous to rolling, with the *vegeto-mineral water*, or with a weak solution of *alum* in water, or *vitriolum album*, especially in great debility or relaxation.

The roller should be placed so skilfully, as never to occasion pain, swelling, or inflammation by its tightness, nor become useless, from the want of a necessary pressure.

On Compress.

Compresses are likewise useful in the cure of ulcers. In laxity and sponginess of the surrounding parts ; in the sinuous ulcer ; in those little exuberances called fungusses, or vulgarly, proud flesh.

These compresses may be composed of soft linen, or lint, repeatedly doubled ; they may be dipped in the solutions recommended in varices of the veins, and their shapes should be adapted to their various intentions.

Bandages and compresses, when judiciously applied, greatly promote the cure of ulcerations, and assist in supporting muscular motion : in some œdematos, or dropsical swellings, however, and in very corpulent patients, they should be cautiously used, or wholly omitted.

Tight bandage, likewise, is injurious in all inflammations, and inflammatory swellings,

ings, and where pain is the consequence, it should never be repeated.

After ulcers are perfectly cicatrised, the bandage should, for a considerable time, be continued, to prevent external injury, and a relapse of the disease.

Where the veins are varicous, or dilated preternaturally, a laced stocking should be worn on the limb for a long time.

On Complicated Ulcers.

The successful cure of the simple ulcer depends on the healthful state of the patient's constitution; but when the fluids are acrimonious, and the solids in consequence excited to a preternatural action; an ulcer will not incarn; for, on the contrary, it often enlarges its dimensions, and becomes, what is called, a *complicated ulcer*.

A complicated ulcer, therefore, is an ulcer joined with some irritating cause; either in the constitution, or adjacent parts, which retards its healing.

Causes of Complicated Ulcers.

Some irritating causes in the human habit are sufficiently powerful to produce ulcers; as the anasarcous dropsy; the sea or land scurvy; a putrid tendency of the fluids; lues venerea, or cancer, &c.

There are, likewise, other causes, not indeed definable, nor very easy to explain, except from their effects, which, though not capable of producing ulcers of themselves, yet, if any external violence should abrade the skin, or any accidental wound or bruise should happen, an ulcer difficult of cure is the consequence. The examination of ulcers arising from what may be termed a *bad habit* of body, without any previous visible disease, is worthy of consideration.

Fresh wounds from sharp instruments heal immediately by the first intention, as it is called, in many; yet similar wounds in others, fester, produce pain, inflammation, tumors, ulcers, nay, even a mortification.

Parts of the body lacerated by violent gunshot wounds, with great loss of parts, heal kindly in some; in others, the slightest wounds

wounds degenerate into incurable ulcers, gangrene, or mortification.

I have seen slight wounds in hot climates frequently produce the locked jaw, and terminate fatally; while large wounds, even of the viscera, or other parts, proceed favourably through all the regular stages of healing.

The same diseases attack, and terminate, in different people, differently: to investigate this *individual* variety, and trace out the *causes*, well merit the attention of the reflecting physician. Researches of this nature, conducted with acute penetration, profound and unprejudiced reasoning, and a nice discriminating judgment, will raise the art of physic to the highest pitch of excellence.

It is, however, a very good criterion of a patient's constitution to determine, whether scratches, slight wounds, or any accidental excoriation, heal with facility; for it certainly indicates a healthful habit: on the contrary, where inflammation, pain, and a difficulty of cure succeed to accidents of this nature, it may be depended on some latent morbid cause in the constitution gives rise to these irritating effects.

These

These irritating effects have various causes; as *climate, air, diet, exercises, &c.* *seasons of the year, particular habit, the increase or diminution of the secretions and excretions:* all which should be considered, and, as much as possible, ascertained. Those great and important objects are treated in *physiology* and general *pathology*;* the application of which must be left, in general, to the good sense of the medical practitioner.

On the Acrimony of the Humors.

It must appear a plain fact, that various acrimonious states of the fluids may retard the cure, or be the original causes of ulcers: this being established; an investigation and discovery of those causes may be the best means of laying a rational foundation for the curative intentions of each particular species of ulcer.

An *acrimony* is the over impregnation of the humors of the body with some certain irritating particles.

The

* In the Latin edition of my *Schola Medicinae Universalis Nova*, now in the press, and nearly finished.

The causes and effects of acrimony are various ; as an enumeration of some of the most common will clearly amplify.

An *acid acrimony*, chiefly common to infants, is productive of the rickets, and, sometimes, even ulcers, curable by antacids, bitters, &c.

An *alkaline acrimony* will produce spongiose spreading ulcers of a putrid tendency ; these I have frequently seen in hot climates, where most diseases terminate in putridity : in these cases bark and acids succeed.

The *muriatic acrimony*, from respiring in the sea air ; from salted food ; half putrid water ; bad bread, and lying in a confined place : this produces ulcers about the gums ; the teeth become often carious, and drop out ; large livid eruptions appear in different parts of the body, and spreading ulcers form on the extremities, sometimes with a caries of the bones.

Neither bark nor acids cure these diseases at sea, and yet an infusion of the extract of malt not only prevents, but cures this disorder. Land air, fresh diet, sweet water, plenty of vegetables, and cleanliness, recover

the patients speedily, often in the most desperate stages.

A *land scurvy* may arise from feeding on too much animal food, particularly *salted*, or from using too much *salt*; which is a common cause of ulcers of the legs, and various eruptions of the inflammatory kind, without any of the symptoms of the sea scurvy; this requires quite a different treatment; for antiphlogistics, as nitre, and sometimes mineral alteratives, are necessary.

Various other acrimonies produce their effects in particular parts.

As the *Rheumatic*, in the *tela cellulosa* of the muscles.

The *scrophulous*, in the lymphatic vessels and glands.

The *schirrus*, in the lips, nose, breasts, &c.

The *itch*, *erysipelas*, and others, in the skin.

The *venereal acrimony* affects the lymphatic glands, the fauces, the periosteum and bones: curable by mercury.

Some of these complaints are hereditary, and transmitted from parents to children.

It must be striking to every reflecting mind, that these variety of causes, producing various effects,

effects, require different and opposite treatment. Ulcers of the legs arise from a multiplicity of causes, and therefore require many different modes of cure: but for practitioners who have obtained the public confidence, or credulity, no matter how, to solemnly assert, in a magisterial and self-important tone, that ulcers are *local diseases*, and that their causes are not to be investigated, nor exist in the patient's habit, argues the utmost ignorance: when they proceed farther, and terrify the afflicted patients with the apprehension of some dangerous consequences from a cure of the ulcer, it can only arise from a want of application to the duties of their profession; from some mean interested views, or a vain supposition, that their contracted knowledge is the height of medical science, and that the art itself admits of no improvement.

The true causes of most diseases are to be investigated by great industry; and, though we may not immediately arrive at the summit of perfection, yet those who constantly make attempts to improve the art by unwearyed observation in practice, and reflection,

tion, will certainly succeed much better than those who receive every thing as they found it, without examination, and satisfy themselves with the common vulgar prejudices. Perhaps it can be evidently proved that *medical education* is, in many instances, *radically defective*, and if so, what must be the consequences?

Having adduced many proofs in support of the new doctrines concerning complicated ulcers, the various species are next to be considered: amongst which the scrophulous, venereal, and cancerous are to be excluded, as the cause and cure of these are amply treated in my other writings on those subjects.

On Ulcers not accompanied with any specified Disease.

Under this class are chiefly considered those ulcers which become difficult of cure from certain states of the blood, either natural to the patient's habit, or acquired by some irregularities in what is called the non-naturals; these may be denominated *land scorbutic ulcers*.

Of

Of the Land Scorbutic Ulcer, which seems to arise from a Tenacity of the Fluids, joined with a Muriatic Acrimony.

This ulcer is easily discoverable by its inflammatory and painful symptoms, and a tendency to a surrounding callosity: it is often superficial, but sometimes deep; unaccompanied with any other specific symptoms of disease.

It generally happens to those who drink strong malt liquors, as ale, or porter, or spirits, and eat much animal food; or it may arise by accident, and continue, from the sudden changes of air in this country, in conjunction with the other causes.

Prognostic. These old ulcers are not very difficult to cure, if patients observe a strict diet, and continue a considerable time the use of attenuating antiphlogistics, and mild metallic preparations.

Cure. Bleeding is necessary, and should be occasionally repeated, especially if there should appear an inflammatory buff on the surface of the crassamentum, or in plethora.

The

The quantity of drinks should be diminished, or those of a lighter nature substituted in the place of strong malt liquors.

From half a grain to a grain of well-prepared calomel in a pill, may be given two or three times a week, and continued two months, after the cure is perfected.*

Nitre from two drachms to an ounce may be dissolved in a quart of water, of which a tea-cupfull may be taken twice or thrice in the day.

The dressings may be the same as in the simple ulcer.

This species of ulcer is very common among the lower class of people in London, and thousands have been cured, under my own inspection, by the above means.

The subsequent is the general plan of diet constantly recommended, and given to these patients in writing.

Breakfast. Not to exceed half a pint of tea or milk.

Toasted

* I have always given to the poor, who attended at my house on the public days, from half a grain to a grain of what I call *Aquila alba*, which is the merc. dulc. decies sub. ppt. This acts as an alterative, and never disturbs the intestines.

Toasted bread, with little or no butter.

No food whatever to be used between breakfast and dinner.

Dinner. Plain meats, roasted or boiled, but not salted, and these in less quantity than usual.

Salt to be used very sparingly.

Vegetables or roots may be eaten in moderation, if they do not produce flatulency.

Drinks. To use half the usual quantity of porter or ale; but a lighter liquor is better; as small-beer, or ale and small-beer mixed. If tea be drank in the afternoon, the quantity should be reduced.

Supper. As light as possible, a potatoe or toasted bread, &c. or milk and bread.

All liquids to be drank sparingly, vinegar, lemon juice, and such acids, to be avoided, especially while *mineral alteratives* are administered.

Exercise to be used gently, so as never to excite pain in the ulcer, or fatigue to the patient.

All spirituous liquors to be avoided.

In prescribing the necessary diet, it will be useful to enquire what foods the patient has

has been accustomed to for the preceding years; by this means some errors, and perhaps the cause of the prevailing acrimony will be discovered. Among the inferior ranks of people, the causes may be too great a use of salted meats, *salt, cheese, butter*; too great a quantity of tea, *spirituous liquors*, or strong *malt liquors*; the being exposed to cold and heats, the want of *pure air*, too much or too little exercise, costiveness or purgings, increased or diminished perspiration; errors in the *secretion* of the chyle, or in its absorption, from morbid *mesenteric glands*, or from too large or too small flow of bile to the duodenum. The former produces purging, the latter constipation, and both cause a degeneracy of the fluids. The liver sometimes is diseased, which cannot be removed, but by *penetrating mineral alteratives*. From these circumstances, and many more too tedious to mention, it must appear rational, that all these accidents, errors, or morbid states of the viscera, and other parts, should be, as much as possible, ascertained, and counteracted by a judicious choice of diet and remedies: hence a variety of curative intentions become absolutely

lutely necessary, the greater part of which must depend on a profound acquaintance with all the branches of medicine, and their application to the differences observable in nature.

Perhaps eighty patients out of a hundred may be cured by the former and subsequent methods; but, in the remaining twenty, there may exist as great a variety in the constitutions as in the number of patients, and from hence arises that nice part of practice, which requires an accurate discrimination between one case and another, between one constitution and another: from a consideration of which the *contra-indications* in the modes of cure are determined by the natural, or accidental peculiarities in each individual. If in any part of medicine an extraordinary understanding, skill, and experience are required, it is in distinguishing the *contra-indications* and differences in the human habits. It is by the superior possession of this knowledge, the result of deep study, extensive practice, and close observation, that one physician will be more useful than many others.

The

The common beaten track of any practice, however authorised, must be always inadequate to many individual curative intentions.

The various impediments in the cure of ulcers, already mentioned, are to be prevented, removed, or palliated, by the skill of the medical practitioner; in which the mildest methods should be first prescribed, then more powerful; if those should not succeed, the most efficacious remedies are to be applied. All these should be so conducted, as never to excite any rough effects in the habit, although the most powerful alteratives should be exhibited.

The skilful management in the doses of the mineral preparations adapted to each individual, can never be acquired but by an immense and reiterated experience and observation; but the physician who begins with very small doses, and gradually increases them, will seldom err. It should ever be remembered, that any medicine given as an alternative to produce a change in the constitution, cannot answer that intention if it prove purgative; nor will opiates ever remove the causes of

of habitual diseases ; therefore they have been excluded in the present practice.*

*On the Seasons of the Year in the Cure of
Ulcers.*

Spring and Summer.

In the spring and summer ulcers heal more kindly than in any other season of the year.

Autumn and Winter.

In the autumn ulcers are more tardy of cure, and the winter is the most unfavourable of all the seasons for their incarnation.

*On the Spongious, Putrid, and Spreading
Ulcer.*

This ulcer frequently succeeds the putrid or low remitting fevers, and is more common in

* The prevailing fashion of prescribing hemlock, nightshade, and other deadly poisons, as specific remedies for the resolution of glandular and other complaints, is empirical, and often fatally injurious; opium likewise has been lately exhibited in cases and constitutions diametrically opposite to reason and experience, and, in many instances, has proved destructive.

in hot climates, than in the northern regions: an ulcer of this species may likewise arise from extreme cold or heat, by which the parts have become sphacelated.

Causes. The principal causes of this ulcer seem to be, a partial or general putrescent acrimony, from the blood having lost, in some degree, its cohering particles; hence debility in the solids, and a depravation of many functions; hence diseased viscera and a degeneracy of the fluids.

Symptoms. The parts surrounding the ulcer are generally lax; the ulcer discharges a foetid fancies, and its dimensions daily increase by the destruction of the parts.

Prognostic. The cure will be more or less difficult according to the causes which gave rise to the ulcer: if it should have arisen from fever, and there should be reasons to conclude the viscera in an healthful state, the cure, as in most other diseases, will be more easily effected.

On the Cure of the Spongious, Putrid, and Spreading Ulcer.

If this ulcer should appear after the putrid or remitting fever, while recent, it may be cured

cured by bark and the vitriolic acid, with cordials.

If the above methods should not succeed, there may be some reason to suspect the viscera to be diseased, particularly the liver; for the bark and vitriolic acids, administered during the remission of the fever, contract the opening of the *ductus communis cholangiochus* in the *duodenum*, by which the *liver* becomes either *inflamed* or *indurated*; and this I have repeatedly seen, from the dissection of morbid bodies, *post mortem*, in hot climates. It becomes, therefore, a necessary practice, during the paroxysm of the fever, to give antimonials, as James's powder, or small doses of *tart. emet.* and in the remission, *antiseptics*: by thus alternately applying those remedies, the most inveterate species of remitting fevers are sometimes cured. I have successfully prescribed small doses of calomel, with James's powder, when the bile ducts have been contracted, and the whole body tinged with a deep yellow color, the consequences of a diseased liver.

The treatment of the recent putrid ulcer should, in some measure, imitate the

foregoing, and the bark should be given freely.

External Applications.

The ulcer should be cleansed with tincture of myrrh and bark, and dressed with the yellow basilicon, mixed with *oleum terebinth.* on lint. The dressing should be renewed, at least, twice in the day, to prevent the absorption, as much as possible, of the putrid acrimony.

Of the fætid, but not spreading Ulcer.

From the contamination of the fluids by the former species of ulcer, or the omission of antimonials and mercurial alteratives in its early stages, the ulcer remains, does not spread, but is deep, and emits a very putrid smell.

Causes. These ulcers may arise from a depraved state of the blood, succeeding low remittent fevers, or from any other causes, by which the healthful texture of the blood is, in certain degrees, destroyed.

These

These cases often happen to sailors and soldiers,* and continue in an incurable state, from unsound viscera. An ill performed digestion, a depraved chyle, a bad secreted bile, or a diffusion of bile through the habit, are amongst the principal causes of the ulcer remaining inveterate.

Cure in very relaxed Habits.

The cure consists in restoring the blood to a more balsamic state, by removing the causes of acrimony, and restoring the viscera to their natural functions.

The application of remedies must be drawn from the state of the patient's habit.

If the ulcer be accompanied with great debility, pallor of countenance, a languid pulse, and other general symptoms of relaxation; the *bark*, *chalybeates*, and other *tonics*, will be proper.

No. 11. R. Pulv. cort. Peruv. ʒjfs.

Colcoth. vitriol. bene pulver. vel

Flor. martial. ʒfs.

Spec. aromat. ʒij. Syr. imp. q. s. f. Elect. cuius
sumat Q. N. M. ter vel quater de die.

* In the war before last, I had the care of many such patients, at Bellisle, in the year 1761; and since the late war, many have presented themselves on my public days, for assistance, and have been cured.

Or bark, mineral acids, and bitters, may be prescribed.

During the use of these remedies, from half a grain to a grain of calomel, with three or four grains of any aloetic pill, may be taken every other night, to prevent costiveness, and remove obstruction in the viscera.

All saline purges, and remedies of the antiphlogistic class, should be avoided, as nitre, &c.

The diet should be *dry*, but nutritious, and *tea* used very sparingly, lest the bracing powers of the corroborants should be counteracted, and the intentions of cure defeated.

Of the Foul Fætid Ulcer, in Habits not relaxed.

There is a species of the *fætid* ulcer, in which the constitution of the patient is not much relaxed nor debilitated.

Symptoms. The ulcer is of a greenish or livid hue, superficial or deep, but not spongious; nor are the surrounding parts of a loose texture, but rather inclinable to callosity. The smell is frequently very *fætid*, and the pain exquisite, especially some hours after receiving

ceiving aliment. This ulcer may remain many years, but seldom without evident marks of a diseased habit, which is most distinguishable in the countenance, where languor, discoloration, and uneasiness, are strongly painted; yet the patient pursues his occupation or duties in life, without any extraordinary molestation.

Causes. This ulcer receives its origin from various causes, which, in general, exist in a partial or universal depravation of the blood.

The viscera seem to be particularly affected.

Digestion is rarely well performed.

A healthful chyle is not absorbed by the lacteals.

The circulation seems to be impeded at the part affected, yet exciting sufficient stimulus, heat and irritation, to preserve the putrescent symptoms.

It may be observed, that the putridity of the discharged fluids affects the general system, in proportion as the surrounding parts are loose in texture, or attended with callosity.

If

If the surrounding parts should be lax, the absorbing vessels will easier receive the semi-putrid matter, but callous parts will not easily admit the return of the fluid; therefore, in the former, the blood is more, but in the latter, less contaminated with the alkalescent acrimony.

Where a putrescent acrimony once exists, a few particles may not only affect the immediate parts occupied by the ulcer, but likewise the whole system.*

Cure. The mode of cure being previously accommodated to all the foregoing circumstances, the indications are :

To remove the putrefactive and diseased parts of the ulcer, and produce good digestion.

To correct the acrimony in the habit, by removing obstructions or relaxation in the viscera.

The ulcer may be cleansed by what was recommended in the last species of ulcer; or the following solution is very useful for this purpose.

No. 12. Rx. Merc. corros. sub. gr. xij.

Aq. pur. libij. f. lotio.

This

* This is clearly explained in the pathological part of the *Schola medicinae universalis nova.*

This may be applied to the ulcer by means of a feather, two or three times, previous to dressing it with the precipitate digestive.

If the solution should not answer the intention of deterging the ulcer, a fumigation of *cinnabar factitium*, or *Aethiop. mineralis*, will soon reduce it to a purer state, at the same time the fumes of an excellent alterative will be received in a light manner, by respiration.

Internal Remedies.

The *pulvis mineralis* in the dose of a scruple, or half a drachm, three times a day, mixed in a little water, will be proper.

A powder composed of one third of the *merc. dulc. sexies sub. ppt.* and two thirds *sulph. antimonii præcipitatum*, well rubbed together; or instead of the calomel, the same quantity of *argentum vivum*, rubbed with the *sulph. præcip. antimon.* until the globules have disappeared. The latter will best agree with irritable stomachs.*

* Calomel sublimed twelve times, and well triturated with water, is what I call *aquila alba*; its operation is much milder than the common calomel; but this preparation is not to be procured: I am quite convinced of its superiority, and have always given it to the indigent, who apply for advice on my public days.

A grain, or two grains of either of these powders, may be made into a pill with any conserve, and taken every night and morning; or in some cases three times a day, with or without a solution of nitre, joined with camphor. These pills, if well prepared, never act as salivants, nor disturb the intestines, which latter effect would entirely defeat their intention as alteratives.

In patients with robust fibres, the nitre should be prescribed in full quantities, and *always dissolved* in water, or it may disagree; but to weaker patients, in smaller doses; in the nervous and debilitated, *nitre* should be omitted or joined, with the spt. ammoniac. volat. or camphor. It is by these means an excellent corrector, and penetrating medicine is conveyed into the habit; but it should be observed, that *nitre* seldom agrees well with the stomachs of those who drink *wine*, *cyder*, or indulge with spirits. Perhaps the secretion of the defending mucus of the stomach is diminished, by those liquors contracting the excretory vessels of the mucal glands, or their acid particles may, in some measure, dissolve the mucus: hence the nervous pa-
pillæ

pillæ of the stomach may be more susceptible to any saline spiculæ, such as *nitre*, and disagreeable sensations may be thus produced. Very irritable nervous patients are relaxed by this neutral salt. *Nitre*, therefore, though an excellent remedy to the laborious, and drinkers of malt liquors, whose stomachs are well defended by a mucus, may be injurious to those who use cyder, wine, or undiluted spirituous liquors, or where an exquisite nervous sensibility exists. By long experience, and an unprejudiced attention to such circumstances, from reflecting on the probable causes which produce such various and opposite sensations, may frequently be discovered why remedies are very efficacious in *Holland*, *Germany*, and *England*, where the people, in general, are gross feeders ; yet in *France* and *Italy*, the same medicines are not only unsalutary, but injurious. The English, Germans, and Dutch, in certain districts, bear the *mercurius corrosivus sublimatus* in small doses, when diluted ; yet the *French*, *Italians*, and *Neapolitans* rarely admit its exhibition without suffering painful and tormenting sensations : this I have frequently seen

in

in my continental travels. The inferences from a number of such observations are evident, and of the utmost utility in practice. What will cure a disease in one country or province, may do mischief in another. Whoever follows, with implicit faith, the best medical precepts of cure, without minutely considering a variety of circumstances, as season of the year, place of residence, peculiar constitutions and symptoms, will be often disappointed. There never was, nor never will be, any regular, fixed, and infallible mode of practice in medicine, that will constantly prove successful. The art, therefore, should never be confined, but conform to an infinity of mental, corporeal irregularities, and contrarieties; for these have ever existed, will continue, and should be seriously considered by every studious physician. A great part of practical medicine depends on the good sense and judicious application of the practitioner; but as the gradations of human intellects are various, as some have naturally a quicker and juster comprehension of men and things than others, so must the success of medicine constantly fluctuate and be defective,

fective, or excellent, according to the partial knowledge, or extent of learning and genius in the prescriber.

*On the Chronic Cutaneous Ulcers.**

The chronic cutaneous ulcers, are a species of ulcerations which rarely penetrate deeper than the cutis of the legs, or other parts of the body; but often spread and continue for years.

Symptoms. The skin is destroyed in various degrees, an acrimonious sharp humor is discharged; this drying and coagulating, scabs, fissures, and superficial ulcerations are formed, all different in size and figure. The parts affected itch violently, and bleed on being scratched; are often hot, and inflame, particularly in bed; preventing rest in the night; the dry scaly eruptions or scurfs fall off, and are repeatedly regenerated, and the disorder is often an attendant on old age.

Causes.

* This disease is various in its appearance in different subjects, and is scarce definable. Authors have given names according to the appearances or parts affected: as *Herpes exedens*, *Impetigo miliaris*, *Perifcelis*, *Collaris*, *Vitilgo, seu Alphas*, *Lence*, &c. &c.

Causes. A muriatic acrimony seems to prevail, and the pores in the cuticula being obstructed, either from the circulating powers being diminished, or external cold ; the fluid which should pass off by perspiration lodges itself, and becomes more acrid, between the cutis and cuticula ; its sharp acrimony often destroying both, renders the external surface of the cellular substance like a sponge, from the openings of which issue the sharp humor, irritating the tender nervous papillæ on the cutis, producing that violent itching, which no application, in some cases, can allay. The constant determination of the acrid saline perspirable matter towards the skin, probably causes the long continuance of the symptoms.

Prognostic. The cure of these ulcerations are sometimes extremely difficult, the common modes of treatment not only fail, but sometimes the most improved methods have not succeeded : there are, however, many cases curable, and all can be, in a certain degree, alleviated.*

Cure.

* Amongst a variety of cases, about four years since, two gouty patients, who had suffered extreme misery many years with

Cure. The general modes of cure should be various, according to the causes which gave rise to the complaint.

The constitutions, age, and sex of patients should be considered.

The diet should be dry, and regulated to the last mentioned circumstances; the general precepts of which have already been delivered.

The particular indications are; to determine the humors, as much as possible, from the skin, when a profuse acrimonious humor is discharged, by cathartics, dry diet, and cooling diuretics.

To investigate the cause, and correct the prevailing acrimony, by cinnabarine, antimonial, or such like preparations, with or without nitre.

To junior patients of healthful habits, especially in plethora, bleeding is proper, and evacuating purgatives of the antiphlogistic class three times a week. Antimonial and

with these species of ulcerations, extending from the foot to the knee, were cured by cinnab. ant. finall doses of nitre, a pill of the *aquila alba* occasionally, and proper regimen. One was between 60 and 70, the other between 70 and 80 years old; they are both now in perfect health, nor have the ulcers relapsed.

and mercurial alteratives already prescribed, solution of nitre, or the *pulvis mineralis*.

In senior patients, purgatives may be improper, therefore, from 3j. to 3iss. of Cinnabar of antimony, or *Aethiops Mineral*, with or without small doses of nitre, twice in the day, have corrected the acrimony, and radically cured this species of ulcers in elderly patients.

No. 13. Rx. Cinnab. antimon. 3ij.

Pulv. sal. nitr.

— e tragacanth. c. aa. 3i. M. accurate, f. pulvis, dividendus in iv. vel vi. doses; sumat unam bis vel ter de die ex coch. ij. aquæ puræ.

In some inveterate cases, from the sixteenth to the twelfth of a grain of *Merc. corros. sub.* and the same quantity of *Tartarum emeticum*, dissolved in water, and taken in some sassafras tea, twice a day, have effected many extraordinary cures, not only in these cases, but in the most obstinate scorbutic eruptions, and even in the leprosy. In such very small doses, these remedies may be given with the utmost security: for they never disturb the constitution even of the most

most delicate persons, unless the stomach should labor under some particular affection.*

No. 14. Rx. Merc. corros. sub.

Tart. emet. aa. gr. ij. solve in aq. rofar. 3vij. capiat 3ij. vel 3ss. mane et vesperi ex coch. iv. infus. sassafr. vel decocti sarsaparillæ.

To the above solution may be added, if the prescriber should think it necessary, from 3i. ad 3ij. of nitre.

The same species of ulcer, in some instances, has been cured by drinking a decoction of the inner bark of elm *pro potu ordinario*, and taking two or three times a week the Glauber salts, or any other antiphlogistic purge.

In very lax habits, or if the symptoms should be periodical, the bark and tonics may be useful. External applications seldom avail; however, the *unguentum emolliens*, No. 9. with or without a small portion of *Goulard's extract*, will sometimes allay irritation:

* The greatest accuracy and exactness should be observed in their preparation, and likewise in the dose.

tion : but this should never be used until the internal remedies have been exhibited.*

On the Sinuous Ulcer.

An ulcer without callosity, seated in the interstices of muscles, or between the external adipose substance and muscles, disuniting parts which should cohere, forming a cavity, and externally discharging pus, ichor, or fancies, is denominated a sinuous ulcer.

Causes. Abscesses not sufficiently opened to evacuate the contained matter. An acrimonious serum corroding and dividing the cellular structure of the cohering parts. Punctures, gun-shot, or other wounds. A putrescent acrimony insinuating itself into the interstices of muscles, or between the adipose membrane and muscles : lastly, abscesses forming in parts remote from the situations in which they appear, as in the ulcer, from an affection of the *Psoas internus* muscle, or ulcers in various parts of the thorax, abdomen, loins, back, superior and inferior extremities, &c.

* Oleum olivar. Acet. commun. of each 3*i.* with Litharg. aur. 3*i.* finely levigated, and well united, greatly allays itching and inflammation.

Prognostic. The prospects of cure are dependant on the situation of the ulcer and sinus; on the possibility, or impossibility of precisely ascertaining the direction of the sinus; so that either by dilatation, compress, counter-opening, or a feton, the causes may be removed; but sinuous ulcers of the thorax, abdomen, or Psoas muscle are with difficulty cured, and the last is often incurable *. All ulcers situated in parts subject to constant motion, are not easily cured.

Cure. By dilating the wound in the direction of the sinus, if there be no danger of wounding arteries, or nerves of consequence, aponeuroses of muscles, or tendinous expansions. By counter-openings, setons, or a sponge tent.

By well directed compresses.

By injections of the solution No. 11, if an incisted tumor should have given rise to the ulcer, by which means the cist will be destroyed, and a proper digestion procured.

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The

* I have lately heard, that Mr. Abernethy, Surgeon of St. Bartholomew's hospital, succeeds in curing those *internal lumbar abscesses* by opening them with a trocar, and after the matter is evacuated, the wound is closed and covered, so as to exclude the external air. I confess, I have rarely seen them cured.

The administration of remedies may be selected from the doctrines already delivered; but it is necessary to remark, that some extraordinary cures have been performed in the white swelling of the knee, sinuous ulcers of the loins and thigh, by the *aquila alba*, *sulphur auratum antimonii*, nitrous solutions, and fumigations of *cinnabar factitium*, and small doses of the *Tart. emet.* and *merc. corrosiv. sub.* in conjunction with proper dressings, well directed compress, an extreme dry diet, and a perpetual blister *.

On Fistulous Ulcers.

A sinuous ulcer, with a small external orifice, accompanied with callosity of the surrounding parts, is called a fistulous ulcer.

Causes. The causes are similar to those of the sinuous ulcer.

Cure. The cure must vary according to the degree of disease, and the parts affected; but

* A servant of a Baronet and another young man, both scrophulous, were radically cured by these means: the former had a white swelling in his knee, and lost part of the thigh bone, the other had been diseased ten years. See the 74 Cases. Other Cases might be adduced.

but the general plan may be conceived from what has been already said of the sinuous ulcer. If, however, the fistula should be in *ano*, with the *adeps* coagulated in the cells of the membrane, and cinnabarine fumigations, with powerful alteratives already recommended, after a long continuance, should not prevail, the operation for the fistula in *ano* is the last, though often miserable resource.*

On Callous Old Ulcers.

An ulcer continuing many years, surrounded with an induration of the adipose membrane, is defined an old callous ulcer.

Causes. The general causes are the same as other ulcers, but the surrounding callosity seems to originate in an inspissation, or coagulation of the *adeps* in its cells, and a diminished action in the arterial, or a debility in the absorbing powers of the venal system.

Cure. The callosity must be removed, or resolved, or the ulcer cannot heal. Surgeons recommend the *knife*, *caustics*, or *escharotics* ;
but

* For a new mode of cure in the fistula lacrymalis, &c. see Treatise on Diseases of the Eyes.

but these rough methods are rarely, if ever, necessary. Fumigations of cinnabar, or *Aethiops mineralis*, penetrating alteratives already mentioned of *nitre*, *Aethiops*, *cinnabar*, *aquila alba*, or *solutio Tartari emetici*, joined with *merc. corros. sub.* in very small doses, dissolved in decoctions of *farsaparilla*, *julep*, & *camphor*. &c. effectually remove the cause of the callous ulcer, and, if long continued, with abstinence from acids, produce the most excellent cures.

The general dressings already mentioned may be applied to these ulcers, or a solution of the *merc. corrosivus sub.* gr. iv. ad $\frac{1}{2}$ ij *aque puræ*, as a fomentation, and deterger of the ulcer. The pills used in the *locked jaw* are very efficacious.

On the Carious Ulcer.

An ulcer accompanied with a corruption or caries of the bone, is called a carious ulcer.

Symptoms. It is known by a very rancid fetor, a livid or black discharge, by a loose fungus, through which a probe being passed, the disease of the bone is easily discovered.

Causes: A putrescent, cancerous, scrophulous, or venereal acrimony corroding the periosteum, and denudating the bone,

Cure. The fungus must be destroyed, and the diseased part of the bone removed; the latter is sometimes performed by the efforts of nature; but if not, and the tibia should be affected, the caries may be removed by a raspatory, which I think preferable to the application of caustics, because the former is more certain, whereas the latter may corrode deeper than is necessary, and produce considerable mischief.*

The internal treatment should be governed by a consideration of the causes which gave origin to the carious ulcer. In general alternatives cure, if from acrimony; but, if from the putrid disposition of the fluids, bark and tonics will be necessary.

Of Ulcers of various Parts.

Fetid ulcers of the internal part of the ear, after resisting the most approved common methods of cure from ten to twenty years, with and without deafness, have been radically cured by fumigating the part with *cinnab.*

* While I was a student at St. Thomas's hospital, thirty years ago, I remember Mr. Baker successfully cured these ulcers by rasping the bone.

nab. fact. vel Aethiop. min. by means of a machine* with a curved tube, in conjunction with mineral alteratives internally.

Ulcers, with caries of the bones of the head, have been removed by the same methods.

Ulcers of the eye-lid or nose, by removing various causes, and fumigating the parts.

Ulcers of the lymphatic glands of the neck, or internally in the mouth, or about the fauces, by fumigations and the alteratives recommended in cutaneous ulcers, and by destroying the cists, with escharotics, in glandular ulcers.

Ulcers of the thorax and abdomen, by counter-openings, setons, compresses, and removing causes.

Ulcers about the loins, back, or superior part of the femoris, by the sponge tent, compresses, dilating the wound, or by counter-openings.

Ulcers of the superior and inferior extremities, by the various means already described.

* Some years ago I invented a very simple machine for this purpose, composed of a copper funnel with a curved tube, and the other parts similar to the common fumigating apparatus.—See Cases, &c.

Ulcers from the anasarcous dropfy are commonly incurable.

Venerel ulcers are best cured by fumigation of *Æthiops*, and mercurial remedies internally or externally.

Ulcers from the *leprosy*, and the leprosy itself, has been effectually cured by a solution of merc. corros. sub. joined with tart. emet. or by *Ward's* white drop and decoctio lignorum cum nitro.

The *aphthæ*, or thrush, from putrid causes by lotions of *borax* and antiseptics; from acidities in children by antacids and gentle laxatives of rhubarb, magnesia, and a dry diet.

The *achores* or *favi*, or a glutinous discharge from the foraminula in the head, conglutinating the hair, by weak mercurial unguents applied to the *vertex*, purging, alteratives of the mineral class, a dry diet, and abstinence from all salted food, butter, &c.

The *tinea*, or scald head, by the same means.

The *crusta lactea* in children, with humidity or not, by giving the nurse, if the child should suck, mineral alteratives, and to the child

Æthiops

Æthiops mineralis, or a pill of calomel gr. ss, with gr. j. of Kermes min. twice in a week, for a month or two.

Ulcers in the urinary passages by strong solutions of camphor, mineral alteratives, nitre, &c.

Dry ulcers, by promoting a discharge, with digestive unguents.

Fistulous ulcer of the cheek, penetrating the *ductus stenonianus*, either from an accident, or by incision ignorantly made externally in this part.

By an internal perforation of the tunic of the mouth.

Fistulous ulcer of the urinary passage in any part of the urethra, by incisions on each side of the lips of the ulcer, and promoting granulations with digestives. By preventing the discharge of urine through the aperture, and the internal stricture by the use of medicated bougies, by the hair-lip operation.

A *fistula urinaria post partum* in females, is to be cured in a similar manner.

Time necessary in curing Ulcers.

The cure depending on changing the constitution, in some patients it is necessary to persevere in the modes of cure many months.

Rules to be observed after the Cure of Ulcers.

1. The medicines administered during the cure should be continued for two months after the cicatrising any habitual ulcer.
2. The former accustomed diet should be gradually introduced.
3. Cooling laxatives to the florid and plethoric, and bitter stomachic eccoprotics to the pallid and debilitated cachetic habits, should be occasionally prescribed.
4. Bleeding spring and autumn is proper, unless in debility, old age, gout, &c.
5. The pulvis mineralis is a good preservative in this changeable climate, in different seasons.
6. All excesses should be avoided, particularly in drinking.

7. Perspi-

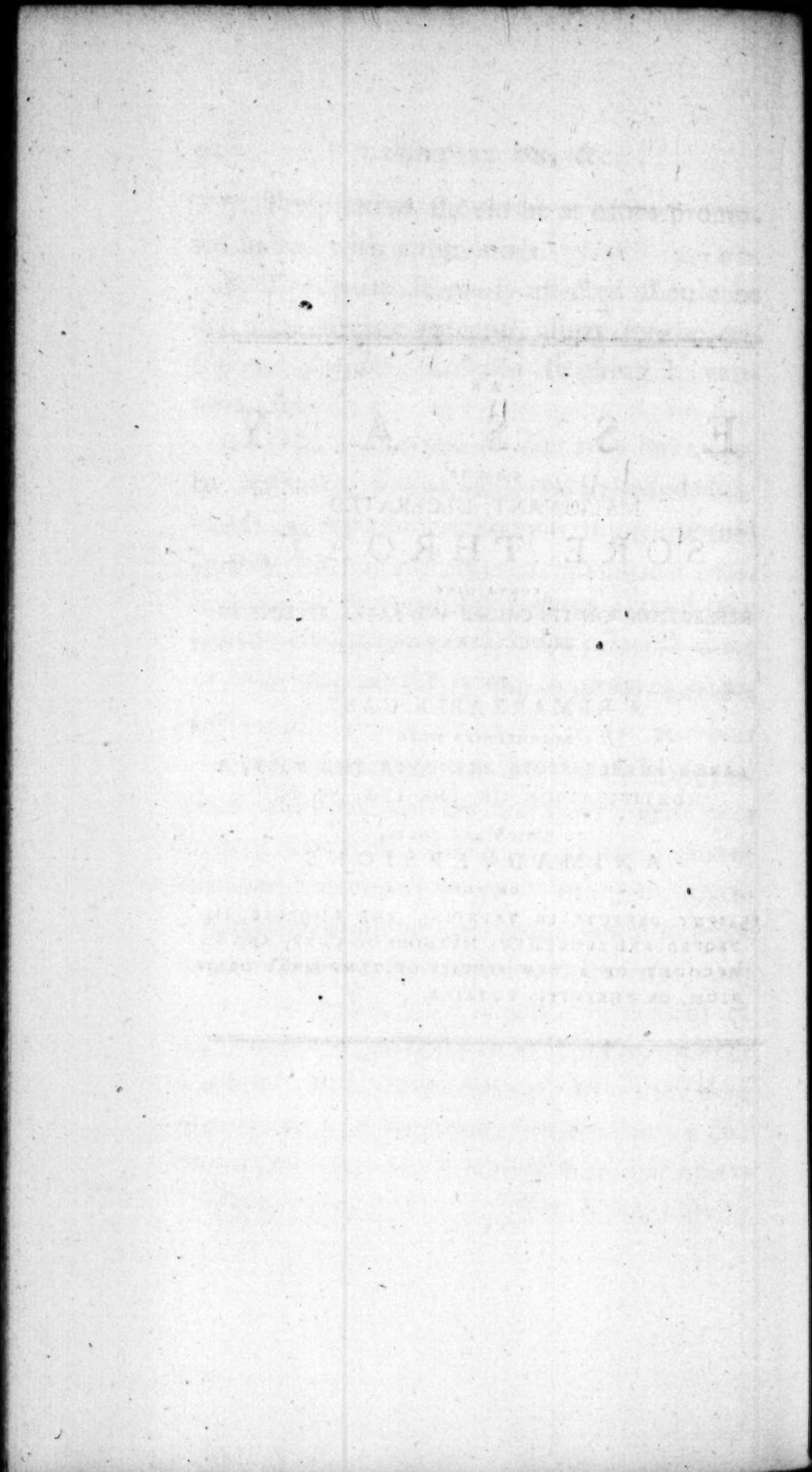
7. Perspiration should be at times promoted in bed with antimonials.
8. The parts formerly affected should be defended against external injury by the *emplastrum simplex*, a laced stocking if varicous, &c.
9. Whatever errors in diet may have caused the ulcer, should be carefully avoided.
10. Temperance above all things should be pursued.
11. Patients after their cures should take lenitive electuary and Æthiops mineral, three or four times in the week, to prevent a relapse.

AN
ESSAY
ON THE
MALIGNANT, ULCERATED
SORE THROAT;

CONTAINING
REFLECTIONS ON ITS CAUSES AND FATAL EFFECTS IN
M.DCC.LXXXVII.

WITH
A REMARKABLE CASE,
ACCOMPANIED WITH
LARGE PURPLE SPOTS ALL OVER THE BODY, A
MORTIFICATION OF THE LEG, &c. &c.

TO WHICH ARE ADDED,
ANIMADVERSIONS
ON THE
PRESENT DEFECTS IN TREATING THE DISORDER, IM-
PROVED AND SUCCESSFUL METHODS OF CURE, AND AN
ACCOUNT OF A NEW SPECIES OF TEMPORARY DELI-
RUM, OR PHRENITIS PUTRIDA.



INTRODUCTION.

THE following Essay has been written, to communicate more universally the most effectual means of treating the putrid, malignant, ulcerated Sore Throat. It is not considered as a complete, but intended rather as a useful performance. At some future period the whole may undergo a revision ; the arrangement of the materials being then re-examined, it may, perhaps, appear with greater advantages. The causes which give origin to putrid epidemic diseases may be more minutely and elaborately investigated ; the doctrines of morbid changes in the atmospheric air inducing deleterious effects in the human fluids more satisfactorily explained by a variety of experiments on aërial fluids ; and a more extensive application of the newest researches and demonstrations in anatomy, physiology, pathology, and therapeutics.

The

The present work commences with a remarkable cure of the malignant, ulcerated Sore Throat, and some short view of its causes and effects, theoretical and practical. Though curing diseases is the greatest test of medical abilities, yet sound reasoning on successful treatment gives satisfaction to every conscientious and regular practitioner. Rational practice is the very soul of the art; empiricism, frequently, the unsettled wanderings of superstition, infatuation, uncertainty, and error.

After the recital of the case, some observations are introduced on the most *celebrated writers* of this fatal disorder: their comparative merits and defects are freely, and, it is hoped, candidly discussed. The causes of the disorder proving *fatal* are reduced to *fourteen propositions*, in which no disrespect is intended to the learned writers produced, who, no doubt, have much contributed to the present improved modes of cure. Other authors may hereafter appear, who may take the same liberties with the present work, and extend the utility of the doctrines, or introduce new inventions more serviceable to society:

society : on either occasion I shall sincerely rejoice, and be ready, on conviction, to relinquish any of the present opinions in favor of more salutary methods of treatment.

The third part contains the most improved plans of curing the malignant, ulcerated Sore Throat, under the heads of distinguishing symptoms, causes, prognostics, according to its judicious or erroneous treatment, and, lastly, the cure. The whole is interspersed with practical observations, the result of long experience, extensive practice, and reiterated reflection.

Afterward is delivered a short view of a new species of temporary phrenitis.

The learned medical reader will, perhaps, discover several original reflections ; and it may be thought, that an apology is expedient for presuming to differ so materially with many other physicians, particularly on the European Continent.

The liberty of objecting to many former medical, doctrines is founded on a conviction that they were erroneous in principle, and unsuccessful in practice. The veracity of this assertion is well known, and will scarce

be denied by unprejudiced physicians ; yet attempts to abolish the old, and communicate new principles in the healing art, often excite such jealousies and violent opposition, that serenity of life is preferred by several to literary or medical warfare.

The common consequence of public innovations in the art is private dislike amongst some members of the profession ; yet by the peaceable indolence of several excellent practitioners, or a disinclination to publish observations, through fear of illiberal censure, many useful discoveries are often buried with their ingenious inventors.

If such timid considerations had actuated all physicians from the time of Hippocrates to the present moment, the ancient chimerical delusions, which had reigned for near two thousand years, would still have been retained ; numerous useful improvements, essentially necessary for the preservation of health, or removal of diseases, would have never appeared. The most important discoveries, that have elevated the medical art to its present respectability, have frequently been introduced amidst the fury of party and hissing
of

of envy.* Every professional man, therefore, who has penetration to detect, and courage to expose error, or intrude new doctrines, however meritorious, has no more right to expect confidence or candor, until time establishes the truth, than his predecessors. If calumny, detraction, misinterpretation, and falsehood, excited by envy, rapidly fly with eagle's wings ; truth follows with the tardy and cautious steps of experienced old age. It is however to be lamented, that whatever obstructs the progress of beneficial improvements in medicine, operates against the principles of humanity, and consequently becomes injurious to the community.

Men, educated and confined to a certain spot, are frequently supposed to contract narrow prepossessions of a local nature ; they are apt to imagine the knowledge of one place, or seminary, the criterion or standard for all others ; therefore I determined, after receiving the most regular education in surgery, &c. this great city, its hospitals, and lectures, could furnish, to observe the difference

H₂ of

* As the circulation of the blood, mercury, antimony, bark, inoculation, &c. &c.

of diseases, gun-shot wounds, &c. &c. in hot climates, with their various and necessary modes of treatment.

Being in His Majesty's service, from the year 1760 to 1764, in the war against France and Spain, the objects I most desired were answered ; for I had opportunities of seeing at Bellisle, Barbadoes, Guadaloupe, Martinico, Havannah, Jamaica, &c. not only the difference of diseases compared with European, but the French, Spanish, and English modes of their treatment.

The principles and practice of the great *Boerhaave*, whose memory must always be revered by liberal physicians, were, at the period I began my studies (1756) in the highest estimation. Educated in the Boerhaavian school and tenets, which seemed compiled to conciliate the friendship and unanimity of all the contending parties of the preceding medical sects, it must be confessed, I was delighted with the plausibility of the art so rationally illuminated, when compared to the obscurity, darkness, or mystery, of the Galenic, chemical, and other visionary sects,

that had previously pervaded every medical department.

The warm attachment to my favourite author was soon shaken ; for the most excellent Boerhaavian doctrines, in conjunction with those of Hoffman and Stahl, were quite inadequate to the cure of transatlantic putrid diseases, whose rapidity and fatality by no means admitted of the calm and placid attendance on the termination of acute diseases, under the specious pretext of a physician being the mere *minister naturæ* : for by these doctrines thousands perished amongst the French and Spanish, and not a few under the guidance of English medicine, attached to the doctrines of the great Boerhaave. These facts give rise to suspecting the *ipse dixit* of the learned professor, and more successful methods of treatment were discovered, and happily adopted, by every practitioner open to truth and conviction.

After returning from the war, I attended diligently the practice of St. Thomas's in particular, and occasionally the other London hospitals, anatomical lectures, dissections, midwifery, &c. but wishing to receive
every

every information relative to the art, I visited Leyden and Paris, and observed the practice of *l'Hôtel-Dieu*, *la Charité*, *l'Hôtel des Invalides*, &c. and was an auditor to all the public lectures on anatomy, surgery, midwifery, botany, chemistry, &c. in that famous city.

On my return from these speculative and practical studies in the year 1766, I fixed my residence in this great city, first in surgery and midwifery, and afterwards, in 1773, solely as a physician, having obtained my first medical degree from an university in Scotland.

From the moment I entered into practice, being determined to render what medical knowledge I possessed useful to society, I permitted numerous indigent persons to partake of my services, which practice I have continued, except when attending the university of Oxford, or making foreign excursions, for a period of near twenty-two years. The advantages of experience from these sources have been considerable.

At different periods, however, in the summer season I have repeatedly visited the principal hospitals and universities in *France*,

Italy,

Italy, Germany, Flanders, and Holland, to collect the newest discoveries, and to compare the different methods of treating all diseases, in order to select the most useful.

Thus has a period of above thirty years been dedicated to the medical art, not as an idle spectator, but in the most active scenes ; whether the judgment of the author has been equal to these extensive advantages, future publications of a more elaborate nature, and, perhaps, future ages may best determine.

Some learned men affect to censure the knowledge and practice of all the separate branches in medicine, and think it sufficient to comprehend one department : in my opinion, all the parts of the healing art are so closely connected, that, for the welfare of society, they all should be well understood, unless it could be proved that the fewer ideas a man possesses, so much the more capable he is of reasoning and judging on abstruse, complicated, and extensive subjects. The knowledge and benevolence of a physician should be equally universal.

It is not from any ostentation that these circumstances are mentioned ; but to demonstrate,

strate, that the adopting deviations from the common modes of practice, in the present or other diseases, has not arisen from any sudden caprice. Whether these opportunities have answered the intentions of improving the healing art, is submitted to the determination of the candid and learned in the profession.

Another powerful reason for mentioning the circumstances that have given rise to a rejection of some exceptionable medical practices is, the probability of this essay being perused in different parts of the world; therefore it became necessary to inform foreigners that it was not the performance of youth nor inexperience. If these facts induce unprejudiced and impartial physicians to make trial of the doctrines this essay contains, the intentions of the Author will be amply gratified, which are, to render improved medicine universally beneficial. Physicians should be citizens of the world: they should be tender of the reputation of one another; and they should warmly endeavour to diffuse the blessings of the art through the whole habitable globe.

If

If these reasons of an individual were considered insufficient for quitting the *common beaten track* of medicine, there are others still more cogent.

Within these last thirty years, a spirit of inquiry has proved the principal doctrines of many celebrated modern authors fallacious ; a multitude of discoveries in anatomy, physiology, pathology, practical medicine, chemistry, pneumatics, &c. has laid the foundation for a thorough revision and reformation of the whole art of medicine. Those who have reaped the greatest benefit from the new philosophy and medical improvements, will be best enabled to judge of the truth of these assertions : those who have most neglected them, on supposing the art sufficiently perfect, are unlikely to avail themselves of any discoveries, however important.

The late and present fatality of the disorder urged the necessity of the performance ; the motives are general utility ; it is therefore hoped the remarks will be perused with liberality, and received with candor.

The case is recited, to strongly inculcate the necessity of never deserting a desperate disease ;

disease ; the *rationale* is given, to promote a liberal spirit of inquiry into the physical causes of evident effects ; the improved treatment of the ulcerated Sore Throat is subjoined, from a thorough conviction of its necessity.

It must be confessed, I felt no small degree of reluctance on introducing the facts relative to the long experience, which may give some sanction to the free animadversions on many common opinions ; but a conscientious discharge of the medical duties I owe mankind, impelled me rather to incur censure, than not become useful, by enforcing, with all the energy and reasons in my power, some of the salutary principles I had to offer on the present subject.

I now have the pleasure of adding to this Essay the modes of treating putrid fevers, as practised with extraordinary success, in many hundred cases, at the *St. Mary-le-Bone Infirmary* : I call the success extraordinary, because ninety out of every hundred, or more, have been cured ; whereas, in the common methods of treatment, seventy, or more, have died in one hundred, according to accurate calculations made by me at many hospitals.

A

REMARKABLE CURE

OF A

MALIGNANT ULCERATED

S O R E T H R O A T,

ATTENDED WITH

LARGE PURPLE SPOTS, A MORTIFICATION
ON THE LEG,

&c. &c.

INTEMPERATE heat, and superabundant moisture, not only in England, and other parts of Europe, but likewise in all hot climates, are commonly productive of diseases that have a putrid tendency.

In Europe, however, unless in the warmest regions, the malignant, contagious, or putrid affections, are neither so common, rapid in their progress, nor so generally fatal, as in the climates of Asia, Africa, and southern districts of America,

The

The principal causes in hot climates are :

1. Infectious and putrefactive particles floating in atmospheric air, raised and directed by the wind from one country to another, or exhaled by the heat of the sun.

2. Animal or vegetable putrefaction, either from previous extraordinary drought, drying up the water in lakes, rivers, ponds or marshes, leaving a mud contaminated with the effluvia of dead fish, reptiles, &c. or filth from vegetable putrefaction. The component particles of air from these bodies are now better understood than formerly, and of course the diseases they produce.

3. Heavy and continual rains, by which millions of insects, reptiles, &c. leaves of trees, plants, &c. are destroyed, lying in heaps on the earth, and rendered putrid by heat.

4. Vegetable and animal putrefaction, rising in exhalations from the land, or in vapors from stagnated waters, marshes, &c. or contagious mephitic air, arising from mines, or exuding through the earth, &c. are all capable of producing very deleterious effects to the human species.

The

The rainy seasons are always most dreaded in the hot regions, particularly in Africa, the West Indies, &c. for long experience has proved their fatality, independent of medical observations.*

In the temperate countries of Europe, though malignant infections are less frequent or dangerous in the rainy seasons of August and September, &c. yet few years pass without many instances of disorders that have a putrid tendency, as fluxes, putrid sore throats, and fevers, &c. &c. particularly in armies.

To ascertain the differences of years with regard to salubrity, or diseases, it is necessary to keep a register of weather, winds, warmth or coldness, moisture or siccitv of the seasons, and their effects on human bodies.

By reiterated observations of this nature, a physician may be enabled to foresee and avert
the

* Those who wish to comprehend more than the limits of the present short publication can admit, may consult a little treatise I wrote for the use of the army and navy serving in hot climates, which was presented to His present Majesty in 1775, at the commencement of the American war. This little book was written from a journal I kept, of the history of malignant and other diseases of hot climates, when I had the honor to be in His Majesty's service in 1761, 1762, and 1763, in the West-India islands, America, at the Havannah, &c. &c.

the consequences of certain states of the air, climate, or seasons, and secure mankind from many evils, to which otherwise they are frequently liable.

The precepts on this subject are contained in a new treatise on diet, salubrious and insalubrious air, which will be shortly published.

For above twenty years I have collected and preserved observations on the prevailing diseases, and their evident causes in this great city, and have endeavoured to investigate their various and more obscure origin.

The constant admission of seldom less than two hundred patients, or more, weekly, has afforded the most ample advantages of ascertaining not only the force and power of diseases, but likewise, in many instances, their predisposing, actual causes. The numerous opportunities of opening dead bodies, and examining morbid appearances, have furnished a variety of irrefutable facts.*

* For near twenty years I have seized, whenever I could obtain permission, every curious or obscure case that offered, and have, by this means, explored the real causes of most diseases, with their various effects: these have been compared with those of Bonetus, Morgagni, Sauvages, Lieutaud, Haller, &c. and, from the aggregate collection, a foundation for rational practice has been principally formed.

The summer of 1787 was remarkable for heavy and continual rains before the usual season ; the air in and about London was contaminated with the exhalations of animal and vegetable putrefaction ; and the common disorders had a greater tendency to a putrefactive state than usual.

The small-pox, scarlet fever, malignant putrid sore throat, proved, in many instances, very dangerous, or fatal. At the village of Kentish Town, and other places contiguous to London, the small-pox has ravaged with uncommon fatality, and malignant ulcerated sore throats continued, even in the month of December, to be very destructive ; with purple *petechiae*, and all the symptoms of exalted putridity.

In many other parts of the kingdom very malignant fevers have appeared. From different countries informations have been received, that several have died in little more than forty-eight hours, of putrid, contagious distempers.

Amongst the trading, and inferior ranks of people, who reside in London during summer, numerous have been the instances of

putrid

putrid sore throats, and low nervous fevers of the remitting kind, which, in general, have yielded to the administration of antiseptic laxatives, bark, aromatics, the vitriolic acids, and antiputrescent proper regimen.

One patient, amongst these, was a young man, covered with purple spots all over his body, who voided an immense quantity of bloody urine, with all the concomitant symptoms of the blood approaching to a putrescent dissolution. This case was successfully treated by the bark and vitriolic acid, given very frequently in large doses, conjunctly with a dry, but not animal, diet.

From a comparative view of the weather of this last summer and autumn with many preceding years, it evidently appears, that the rains commenced much sooner and continued longer. The putrid vapors or exhalations from the contaminated waters, the destruction of insects, reptiles, and vegetables, spread their baneful influence much beyond the usual period in which disorders of the putrid class most predominate, attended with some circumstances of malignity not so common in England as in the hotter climates.

The

The case annexed is a remarkable instance: for though I have formerly attended the most dangerous, bilious, yellow, and other putrid fevers of the contagious kind in the West Indies, I have not seen any patient, with so many fatal symptoms, ever recover.

Mr. K***, aged twenty-six years, of a robust habit of body, was attacked with febrile symptoms, for which he was advised to drink mustard whey.

On Saturday, the 1st of December, 1787, Mr. J****, in Albemarle Street, a person on whom I had formerly effected a very singular cure, requested my attendance on Mr. K***, whose symptoms appeared as follows, in little more than forty-eight hours:

1. In every part on the surface of the body were broad, purple, livid blotches, either spreading to one another, or in their interstices innumerable purple or livid-colored *petechiæ*, known by the name of purples.

2. On the middle of the right leg, immediately on the tibia, was a part mortified,

tremely offensive to the smell, accompanied with a finous discharge, common to sphacelated parts, and it seemed to spread rapidly.

3. In the arms, legs, and all the muscular parts, were excruciating acute pains, which were greatly augmented on any voluntary muscular actions. The legs and thighs were likewise tumefied and emphysematous.

4. The eyes had a glaring appearance, the pupils seemed dilated, and the vessels of the conjunctive membrane were all in a state of distention; and a darkish red blood had been forced into numerous vessels, which, in a healthful state, conveyed limpid serum.

5. The fauces, uvula, and the posterior part of the palate and mouth, had a dark red, or livid appearance.

On each side of the internal part of the throat, near the tonsil glands, the parts were putrid, and in a state of actual mortification, surrounded with specks, and small sloughs of a very putrid appearance.

6. The breath smelt intolerably putrid; indeed, so extremely offensive, that I ordered the door and window of the room to be opened,

ed, to admit some fresh air, and vinegar to be poured on live coals, in order to enable me to bear the noxious exhalations.

7. The tongue was covered with a dark brown mucus, the teeth and their interstices had a livid appearance, from a similar matter adhering to different parts.

8. The pulse beat a hundred and forty strokes in a minute, not strong, but feeble. The pulse was depressed, though very rapid; this is a characteristic sign of the most dangerous, malignant, putrid diseases.

9. The respiration was quick, and the air emitted highly putrid and hot.

10. The mind of the patient seemed in a state bordering on torpidity, not the least suspicious, nor apprehensive of the immediate and surrounding dangers.

11. There was nausea in the stomach.

12. A constipation had remained for some days.

In a disorder, so replete with danger, accompanied with such a variety of alarming symptoms, a clear conception of causes, just reasoning on effects, spirited conclusions, and a rapid execution of whatever should be de-

terminated, became absolutely necessary : how these were conducted, the cure will clearly illustrate.

As the rational principles of practice, however, should precede every regular method of curing diseases, these are first introduced.

1. From the putrid acrimony exciting a very increased action in the arterial system, the texture of the blood was nearly destroyed, approaching to a state of dissolution. This contaminated, putrid-tending blood was forced into the minutest arteries of the cutis by the increased arterial system.

The arteries, which exhale naturally a fine pellucid serum, suffered the putrefcent blood to pass towards the external pores of the skin, through rapid force and changed state of the fluids : from hence purple or livid spots on the surface of the whole body.

In very hot climates, I have sometimes, though rarely, observed the dissolved blood to transpire through the external pores : in colder regions, and in England, the pressure and coldness of the external air may prevent such symptoms.

2. From

2. From the same sources, and an increased deposition of the depraved fluids, the mortification on the leg. In the extremities, gangrenous appearances are more common than in the parts near the heart; the circulation is more likely to be languid, impeded, and even cease, which constitutes the *sphacelus*, or destruction of circulation, and sensibility in parts mortified.

The external treatment of the leg was committed to the direction of Mr. Humpage, of Harley-Street, Member of the Corporation of Surgeons in London, who scarified the part separating, and applied spirituous applications and *oleum terebinthinae* to the sphacelation, in order to promote a separation, correct, or prevent the putridity from spreading.

Some very ingenious surgeons, whose merit is justly held in high esteem, have lately produced new doctrines on mortifications. *Opium* has been recommended, in considerable doses, as a very efficacious remedy, both externally and internally. As far as I have been able to comprehend the declared *rationale* of such a proposterous practice, I

am greatly deceived if they do not mistake the effect for the cause of the mortification, and they apply remedies to check the arterial action, or increased stimulus, when the circulation of the blood has entirely ceased, and consequently there can neither be irritation, stimulus, nor any vital action to restrain.

There is every reason to assert, if, in the present case, *opium*, according to the prevailing fashion, had been prescribed for the mortified appearance, by diminishing the nervous powers and arterial action, death must have been the inevitable consequence. This subject, however, is more particularly examined in another treatise.

3. The acute excruciating pains in the muscles, appeared to arise from the putrid tendency and irritating power of the vitiated fluids, not only circulating in the arterial and venal system of muscular parts, but likewise pervading the cellular substance of the *tela cellulosa* in the interstices of the muscles, and even sub-divisions, however minute, of the muscular fibres. From the putrid state of the fluids, and partly of some of the solids,
perhaps

perhaps the combining principle, or air, began to be extricated, and the emphysematous swellings of the legs and thighs seemed to favor such an opinion.

4. The appearance in the eyes indicated a determination, or augmented flow of blood to the head, with some retardation, or obstructed circulation in the venal system: hence the turgency of vessels.

The dark appearance in the vessels of the conjunctive membrane, and the transmission of the dissolving blood into the most minute vascular system, gave the strongest and unequivocal demonstrations of the high putrefient state of the fluids, and their power of increasing the action of the arteries.

5. The most dreadful putrid ravages being in the throat, fauces, uvula, palate, &c. with the gangrenous and other putrid symptoms, ulcers, &c. gave reason for concluding, that the disease, *ab origine*, was caused by putrid miasmata in the air, similar, but more noxious, than those producing the common malignant, ulcerated sore throat. In short, the disorder was received by breathing in putrid air.

6. The

6. The putridity of the breath was easily accounted for. The air passed and repassed in inspiration and expiration, not without conveying and re-conveying some of the putrid effluvia exhaling from the sphacelated and ulcerated parts about the throat, tonsils, &c. The lungs constantly received fresh malignant putrefactive air in respiration, and contaminated the blood: this probably caused the augmentation of all the putrid symptoms.

7. The putrid appearances on the surface of the tongue, gums, and interstices of the teeth, were in a great measure owing to the putrid exhalations from the lungs, ulcerated parts, diminished secretion of the saliva, or the mucal glands pouring forth a putrescent, discolored mucus from the degenerated blood, brought by the arteries for the secretion of that lubricating fluid.

8. The rapidity of the pulse, and its feebleness, were owing to two causes; the putrid tendency of the blood irritating the heart and arteries, and the laxity of particles composing the blood, inducing a laxity in the muscular fibres, and hence a general debility.

The

The putrefactive state of the fluids irritates the nervous system of the heart, and causes increased, though weaker action, in the moving muscular and arterial powers.

Augmented heat, putridity, and attrition, soon weaken the muscular fibres. No diseases produce so sudden a diminution of strength as putrid, nor none so quick pulsations in the arteries : this all the putrid diseases of hot climates most decidedly demonstrate.

Putrefactive diseases, therefore, are accompanied with great weakness, increased heat and irritability, and quicker, though feebler, pulsations in the arteries.

9. The quickened respiration appeared to arise from the lungs, diaphragm, and muscles destined to the office of respiration, being irritated by the degenerated, acrimonious, and putrescent state of the blood.

The heat of the breath, to the phlogiston in the air passing from the vesicular structure of the lungs ; this organ of respiration being itself heated by a rapider circulation and irritation in all its larger and minuter vascular structure,

structure, including the pulmonary artery, vein, bronchial vessels and lymphatics.

The noxious smell of the breath originated in mephitic particles of the air, not only passing from the lungs, but the ulcerated parts about the fauces.

10. The insensibility of the mind to the immediate danger of this violent malignant disease, shews the sedative and stupefying qualities of a very powerful predisposing putridity on the nervous powers, that convey to the mind all our various sensations.

Perhaps an extrication of air, from commencing putrefaction, and its sedative effects on parts losing or deprived of this combining principle, may account for this symptom.

Noxious air, if breathed, destroys, in a moment, animal life : respiration, the circulation of the blood, and nervous influence, immediately cease, and death ensues. It extinguishes the flame of a flambeau. It seems a combining principle of animal solids; for its extrication shews the most indisputable signs of animal putrefaction and dissolution.

Animal

Animal substances deprived of this connecting air, become extremely putrid, and insufferably fetid.

While pure combining air is regularly diffused through the parts of the human body, health is present : its absence is the mortification or destruction of parts ; for its antiseptic qualities preserve human bodies, during life, from dissolution.

In the *tympanites*, arising from a sphacelus of any of the abdominal viscera, air is excluded from the diseased parts, which, occupying the cavity of the abdomen, death is commonly the consequence.

The floating of dead bodies, after drowning, is the putrefaction of the body excluding this air.

The lungs of *new-born infants* swimming in water, where wilful murder has not been perpetrated, or executed, is often owing to putrefaction, and is no decided proof of infants having respired : a want of this knowledge amongst surgeons, and in courts of judicature, has often, shocking to humanity and science ! led innocent victims to lose their lives

lives publicly at an ignominious place of execution.

Fixed air is prevalent in the bottom of mines, and called *choke-damp*.

It arises from liquors in a state of fermentation, and occupies their surface, called by the chemists, *gas*, and indeed, lately *gasses*, by a very ingenious philosopher.

It exists in alkaline salts and calcarious substances : deprived of this air by fire, they become caustics.

In *La grotta del Cane*, near Naples, it rises constantly and naturally from the surface of the earth, and destroys animals, and extinguishes the flame of a flambeau instantaneously.

Its gravity, however, prevents its rising much above the surface of the earth ; for I have sat in *La grotta del Cane* for an hour or more repeatedly, and have seen different animals perish near my feet, while I remained in this *grotta* uninjured.

Mr. Cavendish has discovered that this aërial acid, or fixed air, is one and a half heavier than atmospheric ; therefore its deleterious

deleterious particles cannot ascend, unless buoyed up by a strong wind: but, by this means, there is a possibility of producing mischief, although its effects are much mitigated by an union with atmospheric air.*

The discoveries on air being yet in their infancy, one philosopher often refutes what another advances; but the world is greatly obliged to every experimenter in this abstruse pneumatic science, for by their researches and disputes mankind will be benefited. Numerous branches of science, obscure or unintelligible thirty years ago, have been clearly investigated, and *data* fixed, beyond the reach of idle disputation; visionary hypotheses are, in many instances, degraded; the dignity of truth, and demonstrations maintained by irrefutable experiments, deductive reasonings, and just conclusions.

The

* In marshes, ponds, and rivers, where the soil contains mud, or substances in a state of putrefaction, on stirring, a great quantity of phlogiston is disengaged.

Animal substances, in putrifying, emit $\frac{2}{3}$ fixed, and $\frac{1}{3}$ inflammable air. Putrid cabbage, or the water in which it is boiled, are dangerous, and their putrid vapors should be avoided: all garden collections of filth and putrid vegetables are unwholesome.

The inflammable or phlogisticated air arises, and may be diffused in the atmospheric air, so as to be injurious to animals.

Air balloons are constructed on the principle of levity in phlogisticated air.

It appears then, that neither a heavier nor lighter air than the atmospheric is healthful for human beings to breathe; but it is a curious phenomenon, that the former descends towards the feet, and the latter ascends to a great height; so that, unless from the change of situation of these two natural aerial fluids, little is to be dreaded from their noxious qualities*

Fixed air, or aerial acid, however, being nearest the earth, explains the mischiefs arising from human beings unguardedly sleeping, in certain places, on the ground; examples of which are common in the West Indies, America, and between *Rome* and *Terracina*, in the road to Naples, where death is most frequently the consequence.

The

* In atmospheric air, or the air we breathe $\frac{1}{4}$ part is pure air; $\frac{15}{16}$ part aerial acid, unfit for breathing, capable of destroying irritability in the lungs, and even the heart; $\frac{2}{3}$ parts are not accurately determined, but are supposed phlogisticated. These calculations, however, vary according to seasons, weather, and situations.

The people, in these horrid stations, burn fires all night; but lying on platforms at a certain height, well covered, would be a much better preservation against vapors, the phlogiston excepted.*

These few remarks on the putrefactive qualities of aërial fluids arise from the present subject; but are only to be considered a very imperfect sketch of what might be delineated in these very scientific and useful regions of modern philosophy.

11. The nausea in the stomach seemed to owe its origin to the descent of some of the putrid ichor issuing from the ulcers about the fauces and sphacelated parts.

12. The constipation, perhaps, from the determination of the diseased fluids to the surface of the body, producing the purple, broad discolorations on the skin; or, from a decreased action in the peristaltic motion of the intestines, diminished saliva, bile, pancreatic juice, &c.

PROG-

* Some years ago, I believe, I saved the life of a great prelate and his domestics, by having some rum in my chaise; for we were obliged to remain several hours in the night at a place in the *via Trajana*, between *Terracina* and *Rome*, in a journey from Mount *Vesuvius*.

PROGNOSIS. From a consideration of so many dangerous symptoms, some of which, even singly reviewed, prognosticated an approaching dissolution, there was every thing to dread, but little to hope. Notwithstanding all these unfavorable circumstances, it was determined not to desert the patient, but to exert the utmost force and efforts of medicine in attempting the preservation of his life.

CURE. The contemplation of all the symptoms, their causes, and probable consequences, pointed out the curative indications, which were :

1. To remove nausea, constipation, and prevent the putrid matter issuing from the mouth and fauces injuring the stomach and intestines, and inducing a mortification of those parts.

2. The correcting, restraining, or counteracting the putrid disposition of the fluids.*

3. The removing the putrid sordes, and mortified parts about the fauces, throat, and mouth, to prevent absorption, descentin to the stomach, or their putrid halitus into the lungs.

4. The supporting the *vis vitæ*, as much as possible, by antiseptic food and drinks.

* In dissections that I have made after death from putrid severs, I have commonly found the intestines in a gangrenous state.

5. The removal of the morbid parts of the leg, to prevent the absorption of the putrefactive fumes discharging from the sphacelus before the separation of the eschar could be accomplished.

6. The admission of fresh atmospheric air continually, that as few particles of air, already breathed, should be again conveyed by the breath into the lungs.

7. The removal of the bed-clothes surrounding the patient, which were already tainted with the purefactive particles, or likely to be infected.

8. The correcting the respirable air of the room in which the patient lay.

The *first indication* of removing the nausea and constipation, required serious reflection.

Purging would have been dangerous, and emptying the rectum merely by a clyster, inadequate to the grand purposes of evacuating the putrid matter, already deposited in the stomach, occasioning sickness, or an inclination to vomit.

It was concluded, that the bark and anti-septics would prove useless, or be ejected

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from the stomach, unless the symptom of nausea could be alleviated.

A gentle eccoprotic of the antiseptic kind was thought most expedient, and the following draught was immediately ordered, after well washing the fauces with vinegar and water :

R. Infus. sen. 3fss.

Pulv. crem. tart. 3fs.

Tinct. sen. 3fs. M. f. haustus, statim sumendus.

It was determined not to wait for the operation of the above draught ; but to give the following powders and mixture in the course of an hour, if no alvine evacuations should be procured. These powders and mixture were intended to answer the *second indication*, of correcting, restraining, and counteracting the putrid disposition of the fluids *.

R. Pulv. cort. Peruv. 3vj.

Spec. aromat. 3ij. M. f. pulvis dividendus in xij. doses,

quarum capiat unam secunda quaque horâ, vel s̄epius,

cum coch. ij. misturæ sequentis.

R. Decoct.

* The principles on which the bark, mineral and vegetable acids, or aromatics, act in restraining putridity, is much better comprehended now, than by *Sydenham*, *Boerhaave*, *Hoffman*, *Huxham*, and other celebrated modern writers.

Rx. Decoct. cort. Peruv. ʒxiiis.

Elix. vitriol. acid, ʒij.

Tinct. cort. Peruv. Huxham, ʒiis. M. f. mistura.

The *third indication* was deterring the putrid accumulations about the mouth and fauces, and restraining the putrescent acrimony, its absorption, or descent through the œsophagus to the stomach; the following gargle, therefore, was directed to be used every ten minutes:

Rx. Tinct. Rosar. ʒvij.

— cort. Peruv. Huxham, ʒj. f. gargarisma, faucibus ulceratis & ori sœpiissime abhibendum.

The *fourth indication* was to support the *vis vitæ* by antiseptic food and drinks.

All *animal broths* or *meats* were strictly forbidden; red port with water, not weak, or red port alone, were recommended, and panada with red wine.

Drink, acidulated with the acid elixir of vitriol, was likewise used, but prescribed in small portions, not to be taken unless a desire should be excited by thirst; for *diluting*, as it has been called, relaxes the stomach, and counteracts every curative intention of bark and antiseptics.

The oftener liquids went into the stomach, the oftener it was highly probable some of the offending putrid fordes might descend. The smallest quantity imaginable of putrid matter, absorbed from a very small puncture in anatomical exercises, has deprived the world of many a valuable life.

Before swallowing panada or drink, the mouth, and fauces were assiduously cleansed, lest, with the drinks or aliments, if the latter were taken, any putrid particles might be conveyed into the stomach, and produce purgings, or other dangerous symptoms.

The *fifth indication* was judiciously managed by Mr. Humpage: checking the putrid tendency, and separating the mortified parts of the leg, were assisted by spirituous applications and proper antiseptic dressings.

The *sixth indication* required the constant admission of fresh air, by opening the door and window, in a certain degree, so that air renovated might freely pass, without blowing in a strong stream or pointed direction on the patient.

The

The *seventh indication* was of great importance: the removal of those noxious things which had previously surrounded the patient, and which there was every reason to suspect, from the exalted and ravaging state of the putrid symptoms, were infected. The changing or fumigating the moveable bed-furniture was directed, and the curtains were withdrawn to admit purer air, and to keep the patient as cool as possible.

Nothing can be more injurious than the vulgar idea of suffering patients to continue through the stages of the small-pox, or any fever, but particularly of the putrid kind, without a frequent change of linen, sheets, bed-clothes, and air.

The exhalations from perspiration, the absorption, or reception of respired air in the bed or bed-clothes, must contribute to render the air impure, unfit for the purposes of life, and of dangerous tendency to the assistants of the sick, whether medical, domestic, or visiting friends.

The air which has been once breathed, is well known to be unfit for future respiration.

The

The same breath which has been respired proves fatal in a few minutes, without an addition of fresh air.

Though the impure air received or exhaling from bed-clothes, linen, curtains, &c, surrounding the sick bed, is not so noxious as fixed or confined mephitic air, yet in a less degree it proves injurious, and should be corrected or prevented by every means art or prudence may suggest.

From observations on the English hospitals, and most which I have inspected in France, Italy, Germany, Flanders, Holland, or the West Indies, America, &c. I am convinced considerable improvement might be planned for the safer accommodation of the sick; some remarks on which may be seen in my Medical Advice to the Army and Navy serving in Hot Climates.

The eighth indication, intended to correct the putrid exhalations, or vitiated air, was attempted by raising acid vapours from vinegar, the firing and explosion of gunpowder, as recommended in the plague, &c.

The acid of vinegar is indubitably an excellent antiseptic; but I believe the mineral acids

acids and pure alcohol, mixed in an open glass vessel are more powerful: from these arise a vitriolic, muriatic, or nitrous æther, intimately combined with the vinous spirit. A diffusion of such artificial air, in sick rooms, is highly grateful, and is an excellent preservative against the malignant particles of infection.

In the evening of the 1st of December Mr. Humpage visited the patient, removed the dressings, and found the pulse was only an hundred and thirty, which was a diminution of ten strokes in a minute, in eight or nine hours.

The eccoprotic antiseptic draught had fortunately operated in three quarters of an hour after it had been given.

The powders and mixture had been repeated every two hours, or oftener.

The mouth, fauces, and ulcerated parts, had been washed every five minutes, and neither medicines nor drink swallowed, until the diseased throat and fauces were previously deterged.

No food whatever had been requested, nor was its necessity urged, the whole medical dependance

dependance being placed on the efficacy of the remedies prescribed.

A strict injunction was delivered to the nurse not to permit the patient to sleep, but often to solicit the necessity of gargling.

This treatment was prescribed, lest any of the putridity should pass with the saliva, during sleep, into the œsophagus and stomach : a neglect of which has frequently proved fatal. Sleep is refreshing and grateful ; but its indulgence, in such moments of danger, is highly hazardous, if not destructive.

The medicines were continued through the night ; fresh air was transmitted ; vinegar was either steamed, or gunpowder was exploded frequently ; and all the directions, by the vigilance of the nurse, were exactly observed.

As the sores appeared incrusted round the teeth, gums, and, in some measure, on the tongue, of the aphthous or black thrush kind, the following lotion was ordered to cleanse those parts ; after which the former gargle was continued.

R. Borac. 3ij. solve in

Aq. pur. 3vſs.

Syr. moror. 3ſs. f. gargarisma.

This

This gargle, by the assistance of fine linen tied on a skewer, soon removed all the sores attached to the fauces, tongue, gums, &c.

On Sunday, the 2d of December, on visiting the patient in the morning, the pulse was discovered to be an hundred and twenty in a minute, which was ten different from what had been observed the preceding night, being twenty strokes less in a minute than when first examined.

The purple spots appeared nearly the same.

The mortified part had not spread on the leg.

The mouth was cleaner, but large sloughs of putrified parts adhered near and about the tonsil glands.

The breath smelt horridly offensive.

The acute pains and swellings in the thighs, legs, and muscular parts, continued.

The urine was very high coloured.

Upon the whole, little impression had been made on the disorder, except that the mouth and fauces were less pale or livid, the celerity of the pulse was diminished, and
the

the gangrenous part on the leg had not extended ; but that the patient still lived, was more than could be reasonably expected.

As the medicines agreed perfectly well with the stomach, it was resolved to add fresh vigor to the prescribed plan, to augment the dose of the bark in powder, and to increase the antiseptic force of the mixture.

R. Pulv. cort. Per. 5j.

Spec. aromat. 3ij. M. f. pulvis. Dividendus in xiiij. doses, de quibus sumat unam secunda quaque horâ in coch. ijs. misturæ sequentis.

R. Decoct. cort. Peruv. 3xij.

Extract. ejusdem, 3ijs. solve, dein

Adde Elix. vitriol. acid. 3ij.

Tinct. cort. Peruv. Huxham. 3ij. M. f. mistura.

The gargle, composed of *tinctura rofarum* and *tinctura corticis*, was repeated, and directed to be used very frequently.

The admission of cool air, raising acid vapors, or burning gunpowder, and the removal of whatever might be conceived capable of increasing putridity, were still continued.

The patient was permitted to drink red-port wine in considerable quantities, and as often as desired.

The ulcerous sloughs about the throat were cleansed by means of a skewer, on which fine linen was placed; some of the putrid parts separated, and were carefully extracted, to prevent their conveyance to the stomach.

The same rules were recommended as the preceding day; but as the patient expressed an inclination for food, panada and red wine were taken into the stomach without any disagreement, and, in the course of the day, repeated with like success.

Mr. Humpage declared the putrid parts on the leg appeared favorable in the evening, and continued the spirituous dressings.

In the night the patient was not suffered to sleep, except at very short intervals, but requested to cleanse and gargle the diseased parts of the throat frequently, left, with the breath in respiration, or saliva in deglutition, any of its deleterious effects might be conveyed to the lungs or stomach, which probably had been already overcharged with putrefactive effluvia.

On the morning of the 3d of December the patient spontaneously declared himself easier, and

and required frequently panada and wine : he drank during the night a bottle and a half, or two bottles, of red port.

The medicines and gargle had been repeated through the night with the utmost exactness.

The room was very powerfully filled with the acid vapor, and the putrid smell, before so predominant, unless very near the afflicted patient, was scarcely perceptible.

On examining the pulse, it beat an hundred strokes in a minute, which considerable decrease in its celerity was favorable.

The eyes appeared less inflamed.

The mouth, throat, and fauces, assumed a more favorable color.

The sloughs on the left side of the throat had separated, and though a considerable loss of substance appeared, yet the hollow surface of the ulcer was not livid, nor indicating any disposition to spreading mortification. Having been accustomed to a very extensive practice in surgery in the juvenile period of life, with the opportunities of observing the progress of gun-shot wounds, ulcers, &c., in hot climates, I had every reason to hope I could

could not be deceived in supposing and pronouncing the patient in less danger. There were other reasons that co-operated to confirm this supposition.

Mr. Humpage removed a great part of the putrid sloughs on the tibia; the surface underneath appeared in a favorable state, considering the nature of all the dangerous symptoms, and the mortification, which had spread so rapidly.

The spots, before livid, or those called purples, approached nearer to a dark red and livelier color.

The pains and swellings of the muscular and adipose parts of the arms, thighs, legs, and feet, were mitigated and diminished, though still, on motion or pressure, were troublesome.

The alvine feces were not retained; for two evacuations had happened in twenty-four hours; nor were these highly putrid, but much mixed with the powdered bark.

Reflecting on the dangerous symptoms on Saturday, and comparing these with the present, the same remedies which had proved so beneficial were repeated, no new symptom
nor

nor additional indication requiring a change in the curative antiseptic system adopted.

The patient was not considered out of danger; for the diseased, mortified part, on the right side of the throat, had not separated, but appeared in a manner to leave doubt of the depth of its ravages. The putrid halitus issuing was likewise very disagreeable to the olfactory organs.

The urine was still high-colored.

Mr. Humpage visited the patient in the evening, dressed the leg, and considered all the dangerous symptoms less alarming.

On Tuesday morning, the 4th of December, all the former symptoms were considerably amended; the remaining putrid slough had been forced away from the right side of the internal part of the throat, and the place it occupied formed a deep ulcer.

The purple spots, which before had nearly covered the body, had a much milder aspect, and seemed gradually changing into a livelier red.

The swellings and pains in the limbs and muscular parts had considerably abated.

The

The mouth, tongue, uvula, and fauces, all acquired a more lively and fresh appearance, from additional vigor in the circulation, and a more salutary state of the blood, though far distant from what might be denominated healthful.

The pulse was stronger, and did not exceed ninety pulsations in a minute.

A slight nausea was troublesome, and as no intestinal evacuation had happened for twenty-four hours, an antiseptic laxative was thought necessary.

The nausea was suspected to originate in some matter descending from the mouth, or from bile irritating the duodenum, which, by the nervous consent of parts, or an inversion of the peristaltic motion of the intestines, had been deposited in the stomach, and occasioned the ventriculous irritation, exciting nausea.

R. Decoct. sen. cum tamarind. 3*fls.*

Pulv. crem. tart. 3*fls.*

Tinct. sen. 3*fls.* M. f. haustus statim sumendas.

This acidulous draught, in the course of three hours, not only removed the nausea,
but

but procured two evacuations. The fecal discharge seemed chiefly composed of the powdered bark mixed, and, in some measure, changed in its passage from the stomach to the rectum.

No animal diet having yet been administered; but panada united with red wine only received as food, was, perhaps, the cause of averting putrid feces: this is a circumstance worthy of strict attention in treating putrefactive diseases.

If bile be the cause of the nausea, nothing corrects it so effectually, nor prevents its putrid tendency in the stomach and intestines, as forcing and evacuating the offending, irritating, and noxious matter through the inferior passage, by antiseptic laxatives, without violent purging.

If the descent of the putrid steams or matter were the cause of nausea, their evacuation downwards becomes equally necessary.

Fevers, I believe, often return by the absorption of putrid matter, or contaminating air, from the surface of the intestines; therefore physicians cannot be too circumspect in
gently

gently and repeatedly evacuating, by anti-septic laxatives, these offending causes*.

On Wednesday, the 5th of December, all the morbid symptoms were evidently better; therefore the bark powders, mixture, and gargle, were repeated, but not taken nor used so often.

Red port as drink, and panada as food, were received in considerable quantities.

The ulcer on the leg had a more favorable appearance, the sloughs having been removed by Mr. Humpage.

On Thursday, the 6th of December, the pains in the limbs and muscular parts were considerably abated, the eruptions, which had been purple, were dying away, succeeded by a livelier red, and in some parts the cuticula was separating and scaling off in a furfuraceous or bran-like appearance.

The patient was weak; but as all the symptoms, which before had a dangerous
ening

* In the yellow and other low remitting and putrid fevers of the West Indies and America, one principal object is to correct bile, and evacuate the putrid-tending matter through the stomach and intestines. See *Medical Advice to the Army, &c.*

tendency, were now nearly removed, strengthening the habit became now an object worthy of attention, a light antiseptic and stomachic purgative was ordered for the following morning, as a preparative for changing the diet :

Rx. Infus. sen. 3*fls.*

Pulv. crem. tart. 3*fls.*

Tinct. faera, 3*fls.* M. f. hauitus cras mane sumendus.

On Friday, the 7th of December, the patient was considerably recovering : he was permitted, after the operation of the purgative, to eat white meats.

On the 8th of December, no symptoms remaining that required the assistance of a physician, the patient was transferred to the entire management of Mr. Humpage.

From the 8th to the 16th of the month he was gradually recovering, yet he was ordered the bark and antiseptics three times a day, and occasionally a laxative.

On the 21st, at the time this very passage is writing, the patient is so well recovered as to walk in the streets, and is acquiring strength daily ; nor is there any vestige of disease remaining,

maining, except debility, and a slight ulcer of the leg, in a state nearly healed.

The man, who suffered so miserably in the putrid sore throat, perfectly recovered, and is alive and well at this present time, 1793.

If any thing can establish the utility of exhibiting the *bark* and *vitriolic acid early* in the putrid sore throat, the foregoing case must: but I am concerned to say, that although this excellent and successful mode of treatment has been published many years, yet, so perverse are practitioners, that they prefer sacrificing the lives of their fellow-creatures to the shrine of error, rather than receive instruction.

O B S E R V A T I O N S

ON THE

MALIGNANT, ULCERATED

S O R E T H R O A T .

WITH A

SUCCESSFUL METHOD OF TREATING

THAT DANGEROUS DISORDER.

AN extensive experience in this metropolis brings frequent conviction, that the ulcerated, malignant Sore Throat is not, in general, treated judiciously: this, perhaps, has been the cause of its lately proving so fatal. There are, no doubt, some practitioners who understood its successful management perfectly; but by far the greater number, depending on the doctrines advanced by *Fothergill, Huxham, Russel, Pringle, &c.*, while the methods of cure were imperfect, instead of *Wall, Cameron, Johnstone, Gregory, and Cullen*, lose the most favorable opportunity of preserving patients from this mortiferous distemper.

The principal improvements in this disorder have been collected *since* the former writers published their works, from experience and success ; their doctrines, therefore, become less useful, and are justly superseded, by more certain modes of treatment.

To shew a method of managing this disorder, that, if timely applied, scarcely ever fails of succeeding, is the principal intention of this little essay.

In order to prove the assertions true, concerning the treatment of the ulcerated Sore Throat, a short review of the authors, who have written on the subject, becomes indispensably expedient.

The medical writers on the Continent are totally unacquainted with the treatment of the putrid, ulcerated Sore Throat, excepting what they have collected from English authors.

Neither *Boerhaave*, *Hoffman*, *Sauvages*, *Lieutaud*, *Ludwig*, *Vogel*, nor any other writers, have delivered the true and successful mode of cure ; consequently practitioners, whose practice depends on faith in these

these writers, must fail in answering the curative intentions, and the disorder of course commonly terminates fatally; many instances of which I have known, or received information of, in my continental travels*.

FOTHERGILL.

Dr. Fothergill wrote the first treatise, in England, on this infectious disorder, and

* I have seen numbers repeatedly bled in the putrid remitting fevers, and *nitre* with other saline antiphlogistics administered. The frequency of the pulse and heat is the pretext for this practice in France, Italy, and Germany.

It is not as yet well understood, that intense animal heat can arise from opposite causes; from a true inflammatory diathesis, and from a relaxed and dissolved state of the blood, tending to putrefaction: these require opposite treatment.

What counteracts causes in one instance, must do irreparable mischief in the other: large bleedings and antiphlogistics are proper in the inflammatory diathesis; but in the putrid no bleeding nor antiphlogistics, but cortex Peruvianus and antisepsitics. The symptoms of heat, and celerity of the pulse, direct unreflecting physicians to cool and evacuate, when they should support strength, and restrain the putrid tendency of fluids.

When the most intense heat exists, bleeding and saline coolers are most injurious; as in the West Indies, &c. Indeed so violent is the heat, as to feel like a degree of fire, and yet evacuants by bleeding, purging, perspiration, or antiphlogistics of nitre, &c. kill the patients; when bark, mineral acids, and cleansing the intestines, save the lives of many. See *Medical Advice in Hot Climates.*

merits much of society for introducing a more rational mode of treatment than was before known.

Though, he observes, bleeding is commonly injurious, yet he sometimes admits that operation.

He justly objects to the use of purges, nitre, antiphlogistic remedies, or regimen.

Admits the use of emetics of ipecacuanha, or infusum card. benedict. chamomile flowers, &c.

Draughts of tea and red port.

Advises the patient to keep warm in bed.

The pulvis contrayerv. composit. species aromaticæ, vinum croceum, mint and alexiterial waters cum aceto, &c.

Electuarium e scordio in case of a diarrhœa.

Blisters to the neck.

Aromatic gargles, not, indeed, very efficacious.

The bark in tincture he recommends towards the termination of the disease; but writes nothing of its early exhibition in substance, or in large doses.

HUXHAM.

HUXHAM.

Dr. *Huxham* recommends vomits, and light purgatives of rhubarb.

A volatile saline mixture.

The pulvis contrayerv. composit. with nitre in a bolus, if the fever ran high.

In adults, *two grains* of camphor were added on the second or third day to the saline mixture; a temperate cordial might be added, and a little *tinctura corticis Peruviani*.

Elixir of vitriol and tincture of bark were commonly ordered on the *fifth* and *sixth* days.

SIR JOHN PRINGLE.

Sir John Pringle saith, I lay the chief stress of cure in the *angina maligna*, on the use of a gargle composed of barley water, or sage tea, mel rofarum, and vinegar.

SIR WILLIAM FORDYCE.

Sir William Fordyce justly condemns bleeding, and asserts, that hæmorrhages from the nose do not relieve the patient. “ Emptying
“ the

“ the stomach by a gentle vomit cannot fail
 “ of being useful in discharging the putrid
 “ humors from the stomach,” and then pro-
 ceeds, “ Where there is a looseness, I ge-
 “ nerally correct the humors with my anti-
 “ septic wine whey, No. II. by lemonade,
 “ tamarind tea, or imperial.*

“ I never

* No. I.

Serum antisepticum.

Rx. Lact. vaccin. ℥ss.

Aq. pur. ℥ss.

Simul ebullient; dein admisce succ. aurant.

Sevill. limonior. aa ʒss. ut f. serum.

No. II.

Serum antisepticum vinofum.

Rx. Lact. vaccini, ℥ss.

Aquæ puræ, ℥ss.

Simul. emulliant; dein admisce vini rhenani veteris
 vel albi cujuſvis Hispanici, ʒij.

Succ. limon. ʒj. ut fiat serum.

No. VII.

Hauſtus diaphoreticus ſedativus.

Rx. Spirit. Minderer.

Aquæ puræ, aa ʒvj.

Liquor anodyn. min. Hoffm. gut. xv.

Syr. e meconio, ʒj. M. f. hauſtus bis in die ſumendus
 aut octava quaque horâ.

No. VIII.

“ I never saw the looseness treated in this manner do hurt, though the purging is commonly dreaded as the greatest scarecrow in the malignant sore throat, and therefore checked by every power of art.

“ It did not hurt last summer two young gentlemen of noble families, though it went on after the scarlet and crimson eruption was complete; and where it has been stopped, by opiates and astringents, it has still proved fatal.”—*A just observation.*

“ We have seen cases in which *blisters* did not mend the matter. *Heredia* seldom found any benefit from them; and we have remarked above, that if made from cantharides, they are to tally against the genus and character.

No. VIII.

Hauſtus cardiazus dixitum.

Rx. Vin Burgundic.

Vel Burdegalens.

Aut rhenani veter. ʒij.

Sexta quaque horâ fumendus, vel pro re nata.

No. XII.

Febrifugum antisepticum.

Rx. Decoct. (fortior.) cort. Peruv. ʒij.

Spirit. fal. marin. gut. v.

M. f. hauſtus pro re nata fumendus, & repetendus.

" racter of the putrid fever."—Sensibly remarked.

" To look for any utility from the discharge
" they occasion in a disease, where there
" scarcely exists any purulency, and where
" there is too much stimulus every where,
" appears rather to be worthy of a doating
" nurse, than of a man of sense and skill.

" Dr. Fothergill has given us the history
" of two cases, where warm aromatic cordials
" and anodyne astringents were administered
" assiduously, with suitable nourishment, and
" *vesicatories* applied successively to the neck,
" the back and arms, but without effect.

" There is not in this disease a more fa-
" vorable symptom than a disposition to
" sweat, with a soft and moist skin. No-
" thing seems to shorten it so much, to take
" off the delirium sooner, or to promote so
" happily a good sediment in the water.
" Our first and seventh formula have the best
" effect in this way. " *How seldom does*
" *Peruvian bark perform any of these good of-*
" *fices for the patient!*

" I never gave volatiles, except Mindere-
" rus's spirit, salt of amber, or the anodyne
" liquor

“ liquor of Hoffman, which are all antiseptic,
“ because I know that volatiles only dispose
“ the juices to be more putrid, or quicken
“ the putrid process, where it has already
“ taken place too surely.

“ When cordials are wanted, or indicated,
“ we can be at no loss, while currant jelly,
“ oranges, and lemon, or wines diluted in
“ to what is called *bishop*, or *negus*, or yet
“ pure wine, or old cyder can be had. I am
“ not acquainted with any better cordial
“ draught than our seventh or eighth
“ formula. I never did, nor ever do, expect
“ to see the strength supported, or the disease
“ alleviated, by any possible preparation of
“ animal substances.

“ After sweating has begun, I believe
“ wine will never hurt, if given with mo-
“ deration, either diluted as above, or mixed
“ with panada, fago, rice, and other gruels.

“ Contrast with this kind of practice
“ theirs who give draughts, composed of
“ *God knows what*, so often as every two or
“ three hours, day and night, for days and
“ nights successively, as if nature neither re-
“ quired other drinks, or food, or repose.

“ If

“ If the circumstances of the case require
“ it, Peruvian bark is hurried down with the
“ same haste and solicitude ; and bark must be
“ given in our times, whether indicated or
“ not, where this best and only true febri-
“ fuge drug is necessary ; (and it has often
“ the happy power of triumphing over ma-
“ lignity in this disease, as well as in other
“ putrid fevers, given as in our twelfth
“ formula.) Let it, in God’s name, be given
“ in sufficient quantity to put them in a state
“ of safety, but not persevered in for days
“ and nights together, without any respite
“ to the poor, persecuted patient, when
“ either the difficulty no longer exists, or the
“ state of the skin, or the increased dryness,
“ blackness, and hardness of the tongue, so
“ strongly and fully point out the impro-
“ priety of persisting longer in its use, or as
“ if it were, even in such a situation, our last
“ and sole resource, though, in fact, we have
“ so many other acids from fruits, wines and
“ strong antiseptics, both vegetable and mi-
“ neral.

“ These last remarks are equally applica-
“ ble to the putrid fever at large, and to the
“ malignant

" malignant sore throat under considera-
" tion."

WALL.

Dr. Wall prescribes bark and antiseptic remedies, steams of vinegar, myrrh, and honey, mixed in gargles, bark, and opium, if nasal hæmorrhage appears.

CAMERON.

Dr. Cameron succeeded where breathing was even difficult, by giving the bark plentifully from the commencement of the disorder, with antiseptic gargles; and I have experienced the like success.

JOHNSTONE.

Dr. Johnstone, who has written a complete treatise on the disorder, and whose practical experience was equal in point of numbers to any other physician, condemns bleeding, nitre, or saline antiphlogistic remedies, and administered the bark and acids, with certainty of success, from the commencement of the disease to its termination.

In

In the cure he condemns evacuations, particularly bleeding, which, in particular with the French, was in great use till Dr. Fothergill wrote against it.

Dr. Huxham and Dr. Russel were rather too favorable to venæfection.

Dr. Johnstone has this remarkable passage:

" So long as the prepossession in favor of
" bleeding prevailed at Kidderminster, it was
" one of the most fatal of diseases; but since
" the lancet has been laid aside, and the anti-
" septic method only depended upon, it has
" proved one of the most certain and easy to
" be cured.

" *Emetic tartar* and *James's powder* proved
" very hurtful; large evacuations by stool
" commonly followed their use to the cer-
" tain destruction of some, and the great *injury*
" of others."

He depended mostly upon the bark, and says, " its efficacy has surpassed the healing powers experienced from it in every other instance. Those who have tried it most in this complaint, best know how absolutely it subdues the disease, which is more certainly cured by the early applica-
" tion

“ tion of this remedy than any disease of
“ equal consequence by any means whatever.
“ This is the language of all those physicians
“ who have, from long experience, had the
“ best opportunities of learning the nature of
“ the disorder, and observing the good ef-
“ fects of the bark, a medicine upon which
“ great dependance has for many years been
“ placed in this country.”

HOME.

Dr. Home, in his *Principia Medicinæ*, recommends light vomits, cordial medicines, lightly diaphoretic, red wine, and restoring antiseptic diet.

To sustain the tumor of the external parts with a warm bed, which best prevents a diarrhoea.

Bark, mineral and vegetable acids, are recommended, if they should not produce a diarrhoea.

Blisters are to be applied to the throat.

Bleeding, purging, and antiphlogistics, are, by experience, hurtful.

Dr.

DR. GEORGE FORDYCE.

Dr. George Fordyce, Physician to St. Thomas's Hospital, begins the cure with an emetic of *tartar emet*.

The patient to be kept in a bed moderately warm: both these practices are improper.

Purging to be checked by stimulants or opiates.

But it is a more successful practice to exhibit as large a quantity of bark as the patient's stomach will bear, at least an ounce in twenty-four hours in substance, &c.

Wine, as old hock, may be given along with the drink, which ought to be acidulated, if it does not produce a purging.

In the mean time the throat is to be washed with astringent gargles, &c. acidulated.

GREGORY.

Dr. Gregory says, " Bleeding and cathartics do mischief; gentle vomits and blisters are occasionally of use; acids and neutral salts, by themselves, often do hurt."

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The principal remedies are, *Peruvian bark*, wine, antiseptics, injections into the throat, steams of vinegar and myrrh directed into the fauces, &c.

CULLEN.

Dr. Cullen recommends bark from the beginning of the disorder, antiseptic gargles, and in tumefaction, blisters.

The most exceptionable methods of treating the malignant, ulcerated Sore Throat are the following.

1. The admission of bleeding.
2. *Vomiting*, which is rarely requisite.
3. The ordering *diluting liquors*, as tea, &c.
4. The detaining patients in *bed*, and promoting perspiration by volatile saline mixtures, &c.
5. The depending on such insignificant remedies as the *pulvis contrayerviae compositus*, *vinum croceum*, and two grains of camphor, for the first *three or four* days, or the more dangerous exhibition of *nitre*, and the neglecting the most efficacious mode of immediately administering the bark in large doses.
6. The application of *blisters* to the throat.

7. Waiting until the third, fourth, or fifth day before the bark is prescribed.

8. Administering the bark in the *trifling form* of a tincture, in so dangerous, rapid, and destructive a disease.

9. The giving Dr. James's powder, tartar emetic, or diaphoretics.

10. The decrying the bark, and scarcely admitting this excellent antiputrescent for the putrid sore throat, in which its efficacy, when joined with mineral acids, has been more conspicuous than in any disorder whatever.

11. The checking purgings too suddenly, particularly by opiates.

12. The not sufficiently attending to cleansing the putrid ulcerations about the fauces; nor preventing the descent of the putrid matter to the stomach.

13. An inattention in not conveying a *stream of air* through the patient's room, and the preposterous method of drawing the *curtains* round the bed, instead of admitting the freest ingress of fresh air.

14. The feeding the patient with *onimal broths*, made of mutton or veal, or beef tea,

or the permission of animal diet, or any sort of meat whatever, in such a disposition to putrefaction.

Amongst those who have lately died of the malignant, ulcerated sore throat, the foregoing modes of treatment, collectively, or partly, have been adopted: on the contrary, where *bark* and *acids*, a *cool room*, and *pure air*, have been immediately directed, no perspiration forced, nor animal diet admitted, not *one person* in several hundreds has fallen a victim to this contagious disease.

These assertions flow from immense observation, experience, and practice, for a period of above twenty-seven years, in this great city: though previous opportunities of seeing the rise, progress, fatal termination, successful and unsuccessful treatment of putrid fevers, in hot climates, laid the foundation for that plan of cure in the ulcerated sore throat, which commonly terminates so fortunately.*

I. *Bleeding.*

Bleeding is now seldom prescribed, unless the disorder be mistaken for the true inflammatory

* The treatment of the ulcerated Sore Throat is given in the Medical Advice to the Army, &c. in 1775.

matory sore throat. The appearance of the mouth, uvula, and fauces, to physicians, or practitioners, with a clear sight, distinguishes the putrid, ulcerated sore throat from the inflammatory. The former has a darker red color, with little *white specks* about the fauces, or near the tonsils, with *depressed spirits, debility, and a diminished force in the pulse*: the latter, a lively red inflammation, and swelling, stronger pulse, little or no debility.

The seasons of the year, and intelligence of the contagious sore throat being present or absent, are to be considered. The inflammatory sore throat is common to the winter and spring: the putrid, to the latter end of summer and autumn.

There are several symptoms common to both; yet, to experienced practitioners, nothing can be more obvious than the difference of one sore throat and the other. The inexperienced should practise with caution.

Many authors mention the mistakes in treating the ulcerated sore throat for the true inflammatory; did not daily observation prove, that *bleeding, and giving nitre, diluting, &c.* frequently prove destructive, the repetition

repetition of such errors would be superfluous.

After a *single bleeding*, the pulse has funk, the putrid symptoms spread rapidly, and, in a very few days, terminated fatally ; notwithstanding the bark, elixir of vitriol, and the most approved antiseptics, have been spiritedly prescribed, to correct or counteract this unfortunate mistake.*

2. *Vomiting.*

Vomiting is not quite so objectionable as bleeding ; but, in general, it is unnecessary : and certainly, if the disorder may be successfully treated, without so violent an operation, it is not difficult to determine which is most eligible.

Vomiting is supposed to evacuate any putrid matter in the stomach, and, perhaps, in very rare cases, may be requisite.

An antiseptic laxative is a much safer practice.

A laxative not only evacuates the offending matter from the whole intestinal tube, but prepares

* I have never seen but two patients survive bleeding ; both these cases happened at the St. Mary-le-Bone Infirmary : the patients were brought after the mischief had been done, and they were saved by the antiseptic plan, under my direction.

prepares the stomach and intestines, after being thus cleansed, for the reception of large and repeated doses of bark, so necessary in this disorder.

The vomiting, on the contrary, by inverting the peristaltic motion of the stomach and intestines, may create such a nausea, that the stomach will not be able to bear the antiseptics; this, though it may not always prove fatal, retards the progress of the cure. Loss of time is frequently loss of life in such a ravaging disorder.

The exciting such an universal shock in a local disease, is quite contrary to the most excellent intentions of cure, which are not to stimulate violent action in the arterial system, but to correct and counteract the putrid tendency of the disorder. Emetics have no antiseptic qualities; but, by their force and violence, increase heat, perspiration, &c. which, in this disorder, should be avoided, unless in very singular cases.

3. Diluting Liquors, as Tea, &c.

Diluting the blood in fevers, &c. is present in the mouth of all mankind, whether medical

cal or not, though the theoretical doctrines on which diluting was built by the celebrated *Boerhaave*, and many of his followers, have been long refuted.*

The blood is not so easily *dilutable* in inflammatory disorders as may be imagined; but in the putrid, that have such a known tendency to dissolving the crisis, and inducing a putrefactive state of the blood, nothing can be more preposterous.

Teas, and all watery or warm liquids, relax the stomach and whole body; therefore, are quite contrary to the intentions of bark, tonics, vitriolic acids, and all antiseptics.

If bark and other tonics and antiseptics be proper in putrefactive diseases, which a series of successful practice proves, all teas and *diluters*, as they are called, must be improper and injurious.

Tonics and antiseptics check the dissolving tendency of the fluids in the putrid sore throat, and in all putrid remitting fevers, acting as

* It is no reflection on the great *Boerhaave*, that many newer discoveries have refuted his doctrines: he promoted the greatest spirit of inquiry throughout Europe, and the world is much obliged to this physician for many improvements made by his successors.

as bracers ; relaxing *diluters*, as tea, &c. induce laxity, and increase the putrefactive disposition.

The ulcerated throat, therefore, is best treated, when *diluting liquors* are most avoided.

4. *The detaining Patients in Bed, and promoting Perspiration.*

The ulcerated sore throat is a local disease, not requiring so universal a remedy as continued perspiration.

The bed promotes heat and perspiration ; therefore should be rejected.

Heat increases the putrid tendency of the fluids, and relaxes the whole body ; but as the putrid tendency is local, and easily restrained by cool air and antiseptic remedies ; whatever promotes a general relaxation of the solids, or a dissolution of the fluids, as breathing in respired air, or perspirable exhalations, is likely to increase the disease, and render its cure more difficult.

The *petechiae*, or eruptions in this disorder, which the objectionable writers mention as salutary, are commonly the production of

art, and the effect of a hot perspiratory clinical regimen. They were produced in the case recited, most probably, by the mustard whey inducing heat and perspiration.

If the putrid sore throat be properly treated, there is no necessity for expecting an *eruption*; which symptom is oftener produced by medicine injudiciously applied, than the disorder.

5. *The depending on insignificant Remedies in so dangerous a Disorder, &c.*

The *pulvis contrayerv. composit.* is a very trifling medicine in so fatal a disorder. The origin of this preparation was founded in credulous superstition, or while the furor lasted concerning acids and alcalies.

A few grains, or half a drachm, are directed. I have seen an ounce or two of this powder repeatedly swallowed, by way of experiment, without any sensible effect; the conclusion is obvious. Many other celebrated remedies have undergone the same trial with like effect;

fect: these will be accurately considered in the *Schola Medicinæ universalis nova.** .

The prescribing *vinum croceum* and two grains of *camphor* shew little knowledge of the disorder, or improved practical medicine.

Some medical practitioners, if they do no service, highly applaud themselves in not committing injuries: they suffer diseases to take a natural course, under the wise and specious direction of *nature*.

This invisible agent, nominated *nature*, is a common and ancient expression, very familiar in medical discourses, and in the unmeaning language of the multitude, but hitherto undefined.

To enumerate, describe, or expatiate on all the pretended attributes of what has been pronounced *nature*, would comprehend a considerable mass of all the visionary caprices, whims, hypocritical cant, and false hypotheses, of ancient and modern physic: this the intentions of the present production cannot admit.

i. It

* A work in Latin, comprehending all the branches of medicine, and newest discoveries. Above fifty copper plates are already engraved for this laborious performance, which has already been the labor of many years.

1. It has been a received opinion, that *nature* performs wisely all the natural, vital, and animal functions in the human body, *discovers* when a disease is present, and *rings* the alarm bell to the mental intelligence.
2. The same *nature* has a secret mode of repelling the enemy, and points out to the physician the best means.
3. That a physician should imitate *nature* in the cure of diseases.
4. That the disorders should be left to *nature*, and the physician should watch with vigilance the intentions of *nature*, and second her efforts.
5. That physicians were only the ministers of *nature*, and had only to follow the *vis medicatrix naturæ*.

It would be very difficult to comprehend or explain what is meant by that unlimited word *nature*; for all the writers on this subject are obscure, and yet plausible to those who receive *phrases* or words for investigations and *truth*, or appearances for realities.

It is therefore attacking a visionary phantom, perhaps, to oppose the word *nature* in any philosophical scrutiny. The word *nature* seems

seems an apology for every thing inexplicable, and contains as much meaning as the occult qualities of Aristotle, the *Archæus* of Van Helmont, or the *vis conservatrix & medicatrix naturæ* of Stahl, and many modern physicians.

The word *nature*, as used in medicine, is intended to convey the sensations of pain, the battle between disease and the constitution in various disorders, and their natural termination, without the art of medicine.

The natural and best method of repelling dangerous symptoms, it is said, *nature* plainly points out to an observing physician.*

It is denied, that what is called *nature*, in this sense, either judiciously alarms mankind in sickness of approaching danger, directs the

means

* Many medical readers, for they merit not the name of physicians, or true observers of diseases, boast of the extraordinary wisdom of the ancients in curing the affections of the human body, by observing *nature*.

Seventy patients died out of an hundred in the epidemics of Hippocrates; and whoever will impartially examine the cause, capable of judging, will pronounce the great father of medicine totally ignorant of the causes of fevers, or the use of remedies. Elegant descriptions may raise the reputation of a writer, but they cannot remove disorders.

means of recovery, or discovers to the physician the most eligible modes of treatment.

Symptoms of diseases indicate to physicians their differences.

The industry of physicians, not *invisible nature*, has demonstrated by dissections after death, and by various modern discoveries, the similarity, dissimilarity, and true causes of diseases.

The industry and experience of physicians, *not nature*, in the patient's constitution, discovered bleeding and antiphlogistic remedies to be proper in true inflammatory distempers, though hurtful in putrid: on the contrary, medical observation, reasoning, and just conclusions, *not nature*, demonstrated bark and antiseptics, so useful in putrid complaints, to be injurious in the pleurify, inflammation of the lungs, and other true inflammations.

Diseases, operating in the human body, summoning and alarming this *nature*, never discovered bark to be useful in intermittent fevers, antimony in others, mercury in the *lues venerea*, &c. &c. but commonly chance, accident, or bold empiricism. Afterwards
the

the facts and experiments were reduced to greater regularity by learned and reasoning physicians.

It must obviously appear, that *nature* neither discovers to the suffering patient, nor the physician, the various stages or differences of diseases.

Nature clamorously calls for more strong liquor in drunkenness.

Nature inclines the fluids and solids to a state of dissolution in putrid diseases.

Nature, in the pleurisy or peripneumony, never directed large bleedings, evacuants, diaphoretics, blisters, &c. These disorders, left to *nature*, prove fatal, as likewise many others.

Nature creates a great sensation of thirst in dropsies, which, if gratified, unless in warm climates, where perspiration or a large evacuation of urine is the effect, must do mischief.

Where the blood is already watery, aqueous, or palatable, diluting drinks can only relax the patient, and cause the disease to prove sooner fatal.

Nature prompts consumptive persons, and debilitated old age, to pursue and indulge amorous-

amorous passions, though the consequences are frequently fatal to both.

Nature is so excellent a guide, that it inclines infants of the lower classes of the people to drink porter, gin, brandy, rum, or other spirits, after once having tasted those fiery liquors, so destructive to children.*

Nature, in the early part of life, would be guilty of innumerable instances of unseemly actions and indecencies, did not the refinements of education, and laws of civilised societies restrain mankind.

It would be curious, if it were possible, to consider man in a state of nature and refinement; ascertain the births and diseases, and deaths of both: it would, perhaps, be found, that millions of the uncivilised perish through ignorance or superstition, while as many of the

* In some districts in London scenes of this nature may be constantly observed. Infants of beggars, and the very lower class are plied with *gin* or *aniseed* as fast as their parents drink: they hold out their little hands for a share, and become outrageous if not indulged. At a moderate computation, I can prove that *five* or more children die out of *ten*, by improper management, under two years. Perhaps a proper and humane interference of the legislature might prevent such devastation of the human species, arising more from ignorance than design.

the politer nations are preserved by reason, foresight, and judicious prevention.

Nature fends the plague and other epidemical diseases, by which, in the Turkish dominions, millions are annually slaughtered.

Though these disorders are common, yet it is indisputably true, that in countries where it is most destructive, the people are most ignorant of any rational prevention or cure.

Neither the *experience* of ages, nor *nature*, in those countries, have indicated any rational means of treatment; but the industry of learned Europeans have made extraordinary and useful discoveries in the plague, &c.*

Nature, or infectious air, indubitably produces the putrid, ulcerated sore throat; but what remedy or indication has been discovered by *nature* for this disease?

Nature

* Sole experience, for ages, scarce improved physic; nor does the *longest* *experience* ever form a great physician: old age often rives the fallacies driven into the juvenile mind. It is deep and constant study, reflection on every day's practice, an unprejudiced mind, and the constant exercise of good sense, that improves the art.

Nature vehemently desires cold drink when men are overheated by any violent exercise: drinking cold liquors, or water, at such times, have produced sudden death, inflammatory or fatal fevers.

If *nature* directed wisely, it cannot be supposed she would prompt man to his destruction.

**Nature* and *reason* must not be confounded; the former is an internal stimulator of man, inclining him to various dangers and misfortunes: the latter is a practical system, founded on the experience and reflection of the most ingenious and studious men for ages, the protector and preserver, as far as human industry extends, of either health, ease, or happiness.

Nature does not cure the ague; but *bark* and *tonics*, with certainty.

Nature being suffered to preside in repeated colds, coughs, pleurify, or pulmonic inflammation, either produces asthma, consumption, emphysema, or is fatal to the patient; whereas, by not trusting to *nature*, these diseases, when recent, are frequently prevented from increasing, or removed by the medical art.

A phrenitis,

A *phrenitis*, or inflammation of the brain and its membranes, if left to *nature*, soon produces mortification of the parts; but being judiciously treated by medicine, it is often cured.

Nature acts very unkindly in many chronic disorders—the gout, for instance: for apoplexy and sudden death is frequently the consequence of a retrocession, as it is called, of the gout attacking the vital parts.

The supposition, that what has been so speciously called *nature* being capable of performing such wonders in diseases, has led mankind into many fatal errors. Recent disorders are easily cured, in many instances; but by depending on *nature*, what, in the commencement, appeared trivial, has become a disorder of great magnitude. This every experienced physician's daily practice may fully prove. Mankind too often neglect rational medical advice, when the art can answer the most beneficial purposes, and call for assistance when disorders become very formidable, or even incurable. This not unfrequently happens from depending on what is called *nature*.

Nature is frequently incapable of delivering the *fætus*, which the obstetric art safely performs.

Nature induces savage nations to eat one another, their children, or enemies.

Nature prompts men to vicious passions, frequently productive of great injustice and misfortunes, not only to empires, but to civil-society.

If *nature* were supposed to govern the actions, passions, or diseases of mankind, and to discover the most effectual remedies; such doctrine is only applicable to savages, who live in a state of rude nature; beings who hunt for food, live in fields and woods, eat the natural uncultivated productions of the earth, without coverings to their bodies, &c. In civilized European countries, in proportion as people are reared from such a state of savage nature, and as they refine in their habitations, tables, and indulge in luxuries, so proportionably medicine should change the modes of curing diseases. The nobleman, who, from infancy, possesses every species of luxurious life, should not be treated, if indisposed,

disposed, like the rough, masculine, field rustic, or American savage.

The great partizans for following what they call *nature*, should first reduce mankind to their original state of barbarity, without any cultivation of the arts or sciences, &c. and then might appear some shadow of reasoning in their professions concerning *nature*; but even then, thousands would perish, who might otherwise be preserved by *art*.

From long observation, from reiterated and cool reflection on these subjects, it is affirmed, that diseases can be never worse managed than when left chiefly to *nature*; nor can there be greater reason for a successful expectation in their events, than if skilfully and judiciously treated by *art* from their commencement.*

Nume-

* A physician of great eminence in this metropolis was called to a young gentleman, suddenly attacked with a phrenitis; the pulse almost immediately sunk to about forty. He was in the vigor of health before the disorder commenced. The physician, a great follower of what he called *nature*, would not suffer the patient to undergo a large bleeding, which was proposed from physiological reasoning: he obstinately insisted on waiting *nature*, to see what she would perform, and the young gentleman died in three days.

I opened

Numerous instances, besides, of *nature* strenuously requiring what is likely to prove most injurious, might be adduced.

If *nature* were to be imitated in the cure of diseases, it would be first necessary to determine what diseases are curable by *nature*: these, on examination, would be found very few, either acute or chronic.

If the putrid sore throat be left to *nature*, no physician will doubt of its generally killing the patient; but, not leaving it to *nature*, lives are preserved by the certain cure of the disorder, not discovered by *nature*, but human study and experience.

If the venereal disease were left to *nature*, rotten bones, ulcers, the *loss of the nose*, and other parts, would indubitably be the consequence, accompanied with a long train of misery; but, on the contrary, by the discoveries of medicine, not of *nature*, this dreadful

I opened the subject, and found, what had been predicted, an extravasation of blood from a rupture of a vessel in the brain. There was great reason to suppose, a large bleeding in the jugular might have saved this patient. A patient of Mr. Samuel's, of High Street, Marybone, in similar circumstances, was cured by large bleedings, antimonial diaphoretics, and active purges, under my direction.

ful disease is now, with certainty, remediable.

Ulcers of the legs are curable not by *nature*, but a regular course of mineral alteratives. How many have led miserable lives before these methods were discovered, under an absurd supposition that *stinking old ulcers* were salutary, and therefore should be left to *nature*? *

If, by understanding *conservatrix vel vis medicatrix naturæ*, it is meant that a physician should comprehend the power and force of a disease in the constitution, and of medicine in the cure, it is acknowledged such science is absolutely necessary.

Nature, however, never indicated one nor the other ; but symptoms, and the known effects of remedies, which having been ascertained by numerous facts in practice, and rational medicine, cannot be attributed to what so pompously is denominated *nature*.

These

* Above twenty years ago I discovered a method of curing *old* ulcerated legs, which long experience has reduced to a certainty. This, with all the improvements, theoretic principles, and remedies, has been lately published in a Treatise for the benefit of junior Surgeons, who desire to cure patients, and will depart from old prejudices. It is now in these volumes,

These cursory reflections, on an *old phrase*, which has ever been used as an ancient and modern substitute for *real knowledge*, and as a cloak for *ignorance*, would not have appeared, were it not requisite to attempt the abolition of fallacious delusions, so disgraceful to true science. This pretension of submitting diseases to *nature*, has induced physicians, who received shadows for substances, with great appearance of gravity, solemnity, and a profusion of pomposity, to suffer their patients to perish, *secundum naturam*, in various diseases.

It has been productive of an ineffectual practice; for physicians, pretending to follow *nature*, have declined acting with spirit, when the most urgent necessity required it; and they have often prescribed, in the commencement of diseases, violent emetics, or purges, &c. when *nature*, to use their own term, never directed any such active remedies.

These facts, the works of hundreds of ancient, and even the practice of many modern physicians, amply testify, particularly on the Continent.

Again

Again, at those periods, or stages of disorders, in which a physician should not look but *act*, the same *sectatores naturæ* have remained *inactive*, and instead of proceeding to decidedly prescribe the most efficacious mercurials, antimonials, bark, or antiseptics, they have placidly become idle spectators of the patient's death, under the disguised and modest mask of *trusting all to nature*.

Notwithstanding the numerous discoveries and improvements of many excellent physicians, particularly in this country, there are many other similar prejudices, which require a total exclusion from the art. The ancient and modern doctrines have been so intimately blended, that, without a *thorough reformation*, and expunction of many received opinions, the art will never acquire the dignity and perfection which every humane physician must devoutly wish, though, perhaps, from the *clashing* of interests, pride, and prejudices, it may be thought visionary to expect. A reformation shall be attempted; if it fail, it may be pleasant to reflect, that, in grand attempts; it is even great to fall.

6. *The*

6. *The Applications of Blisters unnecessary, &c.*

The application of a blister to the throat appears an uncertain curative practice. Where there exists already a very increased stimulus, it cannot rationally be prescribed as a stimulant. It frequently does mischief.

When the fluids are in a disposition to produce gangrene, or mortifications, it may be a question worthy of consideration, whether blisters, by increasing arterial action, may not promote heat, inflammation, or a disposition to putrefaction.

Blisters, in the anasarcaous dropsy, have been frequently known to induce a mortification in the limbs, and to occasion death.

As to their application in the putrid sore throat, though they have been often prescribed, yet they have not proved a fatal remedy like bleeding; for numerous patients slowly recovered who have been blistered.

The proof, however, that blistered patients have *escaped death*, is no recommendation of its salutary effects. They have recovered even when sweating and the hot regimen

men have been advised. Singular instances might be produced of persons recovering of diseases, in which the most preposterous practice, ignorance could invent, has been prescribed : but single and extraordinary instances of *escapes* from dangerous situations, in any affair of life, is by no means to be admitted as a rule for human conduct. It is not here intended to shew, by what various and opposite practices some few have braved the danger of the disease ; but, by comparing different methods of treatment, to select for use the most rational and successful.

If blisters are likely to prove serviceable, it should seem they are most rationally prescribed when the throat is most tumefied ; but, in numerous instances of the putrid sore throat, little or no tumor appears.

The difficulty of swallowing is more owing to a putrid-tending affection of the uvula, fauces, muscles, and other parts necessary for deglutition, than to tumors, which are more common to the true inflammatory, or dropsical swelling of the throat than the ulcerated ; in which former cases blistering may have excellent advantages.

On

On the whole, I have rarely prescribed blistering to innumerable patients in the putrid, ulcerated sore throat, and have never seen *one* patient die of this disorder, who was treated, from its commencement, in the manner recommended in this little essay.

In putrid fevers, the efficacy of blisters is extremely dubious; but, *in delirio, vel articulo mortis*, this application may be less exceptionable, as the patient may die whether blisters be applied or rejected. In such desperate situations, medicine may be more justifiable in attempting relief from every quarter, however trivial, than to desert the afflicted in such moments of imminent danger.

Blisters to the throat, then, in the disorder now treated on, are considered unnecessary, and perhaps injurious, as a septic, exciting additional misery, without any advantages: they are, therefore, excluded, as possessing no antiseptic qualities to restrain the rapid and dangerous progress of this putrid disease. Patients have come to the St. Mary-le-Bone Infirmary, who have been much injured by blistering.

7. *Waiting to the third, fourth, or fifth Day, before administering the Bark, &c.*

Fothergill, Huxham, and other celebrated writers, have erred in this instance. The true knowledge of the disorder, and its remedies, were in their infancy, when these authors published their observations.

More recent, repeated trials, and constant success, have proved the necessity of immediately administering the bark and antiseptics, after clearing the stomach and intestines by an antiputrescent laxative of the decoct. senæ, tamarind, and cremor tartar, rhubarb, &c.

If the bark and antiseptics of the vitriolic class be immediately directed, all the dangerous symptoms are prevented, and the very cause of the disorder is removed by the restraining and antiputrescent qualities of those remedies.

8. *Administering the Bark in the Form of a Tincture.*

The symptoms of heat, thirst, or quick pulse, which physicians have thought sufficient

cient motives for opposing the *immediate use of the bark*, are the most cogent reasons for its administration. These signs always arise from the putrid taint vitiating the whole mass of blood, and irritating, and operating as a *stimulus* on the pulsatory solids.

The sooner and more powerfully the antiseptics are applied, the less ravages the putrid-tending fluids make in the constitution. It is certainly more humane and eligible to cure a dangerous disease in *two or three* days, than to suffer it to ravage uncontrolled in the habit *four or five*, at the hazard of losing the patient, before the most efficacious remedy is prescribed. It is not to the honor of medicine voluntarily to engage in hazardous, and sometimes insurmountable difficulties, when they may be avoided, merely to shew the power of the art.

To avert probable danger, and restrain diseases instantaneously, if possible, is most commendable in all disorders incident to the human body.

Whenever the bark and antiseptics are omitted in the commencement of the disease, or given in so trivial a manner as in the form
of

of a tincture, the opportunities of saving the patient are often lost, and the disorder increasing in malignity, may become fatal to those who are the unfortunate victims of its attack.

On the contrary, when the most efficacious methods are adopted, the disorder is not only rendered milder, by never suffering it to become very dangerous, but the contagion itself, in some measure, is checked, which must be a real benefit to the attendants or visitors of the sick, and society in general.

9. *The giving Dr. James's Powder, Tartar Emetic, or any other Antimonial or Diaphoretic Medicines, &c.*

The noblest medicines the art of physic has to boast of, are the above and similar antimonials.

The efficacy of antimonials, in febrile diseases of the true inflammatory class, have been so long known in this country, and are now so universally applied, that they require no additional encomiums.

In other fevers arising from different causes, in the gout, rheumatism, pleurisy,

peripneumony, inflammatory sore throat, and a variety of other diseases, James's powder, tartar emetic, and similar antimonial preparations, are in such general use and approbation; that they are prescribed, sometimes, when their power is not required, and where they may prove injurious.

Dr. James's powder, which I have formerly prescribed when in his Majesty's service, is in such estimation in this country, and its effects so well known, that though I am no admirer of secrets, or what are vulgarly called quack medicines, yet it would be injustice not to applaud this valuable medicine.* It is undoubtedly an antimonial; its effects are exactly similar to the *tartarum emeticum*, regulated in proper doses; and both may be equally depended on, when skillfully applied, which abundance of practice daily confirms.

It is not derogatory to any medicine, however efficacious, to deny its utility in some cases.

* The present use and knowledge of antimonials are, perhaps, owing to the introduction of this medicine by Dr. James, though it was violently opposed, until repeated trials established its reputation.

cases. Antimonials, such as have been just mentioned, are more universally active in the human body, and have a more general utility than any medicines yet discovered; but their powers and effects are more beneficial in universal than partial or local diseases, such as the putrid, malignant, ulcerated sore throat.

Antimonials operate by vomiting, purging, increased perspiration, or urine.

In many acute, dangerous fevers, it is surprising what excellent advantages they effect; but as the putrid ulcerated sore throat neither requires vomiting, purging, profuse perspiration, nor an increase of urine, antimonials producing these effects are unnecessary, and often injurious.

It would be a repetition to urge more in opposition to their administration, as these subjects have been already considered amongst the objections to vomiting and increased perspiration.

As to purging, or augmenting the quantity of urine, they can have no place in restraining the putrid tendency of the fluids; but are more likely to increase the disease.

10. *The decrying the Bark in this dangerous Disease, &c.*

The reputation of the bark and antiseptics is so generally known in the disease here treated of, that nothing but a total ignorance of their excellent effects, or a predetermined obstinacy and opposition to all new improvements, could induce any physician, unless very inexperienced, to doubt their united efficacy.

The prejudices of education, or false pride, may operate so powerfully on the human mind, that it is possible for a physician, as well as the rest of mankind, to attain to old age, without reaping much benefit from experience.

The art of physic requires constant study and application, observation on practical facts, and an ardent solicitude for investigating causes.

Whoever supposes, after the most regular education, and greatest opportunities for improvement in practical knowledge, that he has nothing more to learn, will never become what

what merits the appellation of a complete physician.

Every year produces some new discoveries, and every year requires a recapitulation of former attainments, and an examination of present improvements.

Though it may shew great weakness of understanding, or credulity, inconsiderately to embrace all novelties, yet, on the other hand, nothing can be more dangerous in the mind of a physician, than that species of self-important pride, which disregards and opposes every new discovery, because it happens to inform themselves or mankind of former errors.

The present question, whether the bark and antiseptics should be decried in the cure of the putrid, ulcerated sore throat, has been so strongly determined in the negative, that whoever is not convinced, by the united voice and observations of so many practical physicians in favor of the bark, must be left to pursue practices replete with danger to society.

11. *The checking Purgings too suddenly, particularly by Opiates, &c.*

Opium, a most efficacious and useful remedy in many distempers, is too frequently prescribed in fevers, attended with purgings.

These febrile purgings are generally owing to putrid or acrimonious matter irritating the stomach and intestines.

In the putrid sore throat, and in other putrid diseases, capable of producing a *brown fur* on the tongue, or about the teeth and their interstices, some of the putrid fordes passing with the saliva may excite purgings.*

In putrid diseases, the exhaling arteries, likewise, which are most minutely spread on the whole surface of the stomach and intestines, and on the surfaces of all the viscera, may send off, in exhalations, putrid air, or fluids.

Purple petechiae, or spots, may as easily be conceived on the internal surface of the intestines as on the skin of the body : putrid exhalations

* The *thrush* in children pass from the tongue and mouth through the oesophagus, stomach, and intestines : why may not the same happen to an *adult* in the *putrid fever* ?

halations may arise as frequently from one part as the other.

Dissections after death, from putrid disorders, commonly shew the stomach and intestines sphacelated, or other viscera in a very putrid state.

This I can assert from my own dissections.

These putrid exhalations, or other accumulations on the surface of the intestines, poured forth from the orifices of arteries, in which the blood is accelerated, and in a disposition to putrefaction, must heighten the danger in all putrid fevers, ulcerated sore throat, &c.

Some of these putrid particles may be absorbed by the absorbent veins, whether they be lacteals or inhalent sanguiferous veins ; the existence and power of these last, I pledge myself to fully prove, in a manner equally demonstrable with the blood's circulating.

Without contending whether the lymphatics alone absorb, or the capillary sanguiferous veins attract and receive *volatile, saline*, and other *particles*, not admissible in the lymphatics, all scientific physicians and anatomists agree that the lymphatics certainly absorb ; the proofs of which

are so fully illustrated by many ingenious men, that no farther demonstrations are wanted to evince the fact.*

The lacteals, therefore, on the surface of the intestines, may absorb some of the putrid particles poured out of the mouths of arteries, while the remaining putrid fluids may irritate the intestines, increase their peristaltic motions, and cause purgings, either the diarrhoea or dysentery, if the villous coat be abraded or destroyed.

Putrid particles absorbed by the lacteals being conveyed to the blood by the thoracic duct entering the subclavian vein, can easily give additional force to the putrefactive miasma already circulating in the blood, producing irritation, quickened circulation, and all the symptoms attendant on putrid diseases.

The prevention, therefore, or evacuation of any putrid collections in the intestines, becomes a very necessary object in the cure of putrid or febrile diseases.

* It has lately been imagined, that no system of vessels attracts and absorbs superfluous humidity, except that strictly called lymphatic, consisting of the *lacteals*, *receptaculum chyli*, thoracic duct, and lymphatic absorbents of the whole body, terminating in the left and right subclavian veins. This doctrine, though much countenanced, is certainly erroneous, as may be fully proved by various experiments.

The preventive practice indeed, can only be conjectural, by supposing the possibility of putrid collections being deposited in the intestinal canal.

The most rational method of prevention is to administer gentle acid laxatives, only sufficient to prevent constipation.

Clysters, by only emptying the rectum, cannot answer this purpose.

Light laxatives pass from the stomach through all the intestines, and carry before them putrid or other congestions, by a circular canal, that measures from twelve to fourteen yards, folded in various forms and circumvolutions; so that by them any lodgment of offending matter is likely to be removed from every part, and excluded.

If putrid accumulations, air, or fluids, may be supposed possible to remain in the stomach or intestines, from the causes and facts already enumerated, it must follow, that their prevention or actual evacuation becomes highly necessary.

If, from irritation, they produce purgings, the irritating acrimony should certainly be discharged; therefore purging with acid, correcting,

recting, and antiseptic laxatives, not only prevent, but remove the danger which putrefactive particles might create. The acrimonious, putrid-tending causes of those febrile purgings being removed, all the mortiferous or threatening effects are likely to cease: this I have experienced in numerous instances, both in the West-Indian and European putrid fevers.*

It should, however, be remarked, that purging violently, or repeatedly, is not intended; rough or even saline purges, such as sal Glauberi, Rochelle salt, sal polychrestus; or other neutral purging salts, are all improper in putrid diseases, though too frequently prescribed: it requires little knowledge of chemistry, or the intentions and effects of remedies in putrid affections, to perceive the reasons.

Therefore sena, tamarinds, tremor tartari, stewed prunes, and such like mild laxatives, are most adapted to putrid accumulations in the stomach or intestinal canal, with tincture of sena, rhei, or pulvis rhei, &c. these spirituous

* See the bilious fever in *Medical Advice, &c.*

rituous tinctures, however, are improper, if the stomach or intestines be inflamed.

Now, as a principal part of the cure must depend on clearing and preserving the intestines from putrid exhalations, acrimony, or putrefactive corroding alvine feces, even if a purging should be present, how preposterous and dangerous must that prescription be which checks the purgings by *opium*? This practice has indubitably proved fatal to patients in many instances; therefore it cannot be too much discountenanced.

It has been urged, as a reason for restraining the purgings, that the patient will perish under a diarrhoea, and it must be confessed that this may happen; but in some instances, after a dose of rhubarb, or any of the before-mentioned laxatives, to remove the irritating cause, if it may be thought absolutely necessary, to check the purging, solutions of extractum ligni Campechenis, or pulvis terræ Japonicæ, &c. are to be preferred to *opium*, unless the case be absolutely a diarrhoea, not arising from a febrile impetus.

Upon considering the whole, great reflection, caution, and just reasoning, from the

ap-

appearance of the *sedes*, the stage of the disease, the state of the patient, are all necessary to determine whether febrile purgings should be restrained by any means, as fevers often terminate happily by this evacuation.

12. *The not sufficiently attending to cleansing the Putrid Ulcerations about the Fauces, &c.*

The saliva is constantly descending from the mouth, through the œsophagus, into the stomach; and in inflammations, or irritation of the fauces, it is often increased in quantity. The salivary glands, excited by increased stimulus, is the cause.

If the saliva descends, as it must pass over the diseased parts, it conveys into the stomach some of the putrid matter hanging about the tonsil glands, *velum pendulum palati*, *uvula*, &c.

The truth of this assertion must appear evident, and its effects can be easily conceived, from what is already advanced.

The deterging and constantly clearing the ulcers about the fauces, mouth, &c. of all putrid or other matter, become a principal object in the cure.

The

The *saliva*, therefore, should not be swallowed, but constantly ejected, to prevent every possibility of the putrefactive fomes, or fomes, entering the lungs or stomach. These are the means by which the disorder may be rendered milder, and putrid purgings, mortifications in the stomach, intestines, and other viscera, prevented, or the inhalation of mephitic air into the lungs, in a great measure avoided.

The continually cleansing the ulcers does not a little contribute likewise to the safety of all persons who visit patients afflicted with the putrid, ulcerated sore throat; therefore, of course, must, in a considerable degree, check the usual progress of this dangerous, spreading, contagious disease.

13. *An Inattention to conveying a constant Stream of fresh Atmospheric Air through the Sick Room.*

In all putrid diseases, and indeed every species of malignant fever, small-pox, &c. the renovation of fresh air contributes greatly to check the putrid-tending disposition of the over-

over-heated fluids, whilst a negligence, in this point, will aggravate all the alarming symptoms, and produce *petechiae*, &c.

As nothing can increase the heat, fever, and putridity in fevers, more than air already respired, or noxious steams exuding from the human body by the pores of the skin, received into the lungs again; so nothing can so well prevent or counteract these dangerous effluvia as the constant admission of fresh air into the patient's chamber.

But great attention is necessary in acquiring purer air; for it should not be permitted to flow in a full stream on the patient, but rather in a circular direction; to effect which, the situations of doors, windows, bed, and fire-place, should be considered.

The seasons of the year, and the differences between the day and night air, moisture, or dryness, cold or heat, are not to be neglected.

These determine whether a fire may be permitted or not, for the transmission of cold and moisture, heat and moisture, or a sharp, keen north-easterly air, may all prove injurious. The due regulation of these circumstances

stances will depend much on the experience, care, and good sense of the physician.

The patient should be detained, as much as possible, out of bed ; and if he lay down in any putrid disorder, there should be no curtains to the bed*. The bed curtains, or even clothes, may absorb mephitic or putrid exhalations in the day, from morbid bodies, which may be diffused again in the night by the warmth of the fire or closeness of rooms : much mischief may accrue from these sources, and they are frequently the cause of contagion spreading, in various diseases, as the jail fever, plague, putrid fevers, sore throat, &c. not only in hospitals, poor houses, or prisons, but likewise in private families.

Every thing which can possibly vitiate the air, as fetid animal or rotting vegetable substances, putrid feces, clothes in which infections have been received or retained ; vessels that have been used for the exoneration of the natural excretions, should be all immediately

* In putrid disorders, it is proper entirely to remove *the curtains* from the bed ; experience has convinced me, that little or no dependance can be placed on attendants on the sick in this particular and important circumstance.

mediately removed from the sick chamber, and the room purified by the circulation of fresh air, the fumes of vinegar, muriatic acid, explosion of gunpowder, &c.

The fewer attendants who are admitted into a sick room, the more medicine and domestic management succeed in the cure of all putrid-tending diseases.

Whoever touches the patient in putrid fevers should first well rub his hands in camphorated oil.* Camphor powdered, detained in the mouth of the physician, is not to be disregarded in malignant diseases: it is likewise useful for nurses, to prevent the reception of this putrid disorder, which necessity most commonly, more than inclination, obliges them to attend.†

* Two drams of camphor, dissolved in two ounces of sweet oil, as recommended in the *Medical Advice*, &c. This preparation I generally used in anatomical inquiries; but by an omission, nearly lost my life in a very particular instance.

† In the *Medical Advice*, &c. I have recommended the rubbing the fingers with camphorated oil, before feeling the pulse in the putrid diseases of hot climates: the same method of preventing absorption, I have always used when dead bodies have been opened after putrid diseases. It is known that numbers who industriously pursue anatomical studies, have died by receiving infection from morbid or putrid bodies. The same composition will, in most instances, prevent the communication of the venereal infection.

They should be allowed, likewise, wine, or spirituous liquors mixed with ginger tea, in moderation; if bark, likewise, or bitters be added, the certainty of prevention would be greater.

A free circulation of air, then, and its purification, are no less necessary for the patient than the physician and respective attendants.

14. *The feeding the Patient with Animal Food, in Putrid Fevers, Sore Throat, &c.*

Though this subject has been frequently argued, and the prevalence of the practice censured by several learned physicians, yet every day's experience in extensive practice, proves, that eggs, animal broths, beef tea, jellies, or similar substances, are continually administered in low fevers, under the pretext of supporting the strength of the patient.

None but reasoning physicians can perceive the debility in putrefactive fevers, or sore throat, to be owing to an universal change of the circulating fluids, acting as *septics*, and weakening all the powers of the solids by the commencing dissolution of the fluids.

The

The attendants on the sick, not knowing the immediate causes of debility, and the destructive tendency of the symptoms, suppose it necessary to pursue the same modes of refreshing and strengthening the body, as if arising from fatigue or any natural, but over-exertion of the bodily powers. Thus, with the best intentions, infinite mischief is produced.

The objections to any species of animal food are so obvious, that very few arguments are necessary to illustrate the subject.

1. There is rarely a desire of food, particularly of the animal kind, during fevers, &c.

2. The principal organ of taste, namely, the tongue, is so covered with inspissated mucus, or a foul surface, that scarce anything, except sharp acids, are tasted.

3. Patients themselves seldom desire any animal broths ; for their bare mention, in fevers, will excite aversion and nausea : their admission, therefore, is more owing to the well-meaning officiousness of friends, than any requisition of the sick.

4. When

4. When a putrefactive disease has seized any person, what can augment its dangerous symptoms more than *animal food*?—No substance so rapidly becomes putrid in the stomach or intestines, even in health, and consequently, even the augmentation of this effect must be constant in every febrile disorder of a putrid kind.

5. If *animal food* be admitted, all the proposed advantages of evacuating the putrid fæces in the intestines will prove abortive; for when dangerous symptoms principally arise from absorption of putrid particles by the minute vessels on the surface of the intestines, to send more animal food to increase or add fresh contamination to the deleterious particles, must only accelerate the final dissolution of the patient.

6. A variety of other arguments might be produced against the admission of animal diet in putrid or other acute febrile disorders, as the probable extrication of putrid air, during digestion or chylification, supposing either regularly to happen, in fevers, with the possibility of animal foods being immediately tainted in the stomach by coming in contact

with particles already in a state tending to putrefaction, &c. &c.

7. If very small portions of putrid matter, received into the habit by absorption, can produce such dreadful effects as have been constantly seen from anatomical dissections, how easy is it to conceive the same happening in abrasions of the villous coat of the intestines ; supposing, during fevers, no intestinal absorption in the vascular systems could be effected, from the morbid state of the parts, and the adhesion of an obstructing mucus surface on the whole intestinal canal ?*

* It is well known that very little variolous matter can produce a violent fever, and change the whole mass of blood.

A small quantity of the venereal virus will communicate its baneful influence to the whole body, and continue many years.

Wounds by poisoned weapons, the bite of a snake, &c. in a short time exert their dire effects, so as to destroy life itself, and causing a quick putridity in all the fluids and solids of the human frame.

ON THE
IMPROVED TREATMENT

IN

THE CURE

OF THE
MALIGNANT ULCERATED

S O R E T H R O A T.

To render the antecedent observations of more extensive utility, the succeeding concise view of the improved treatment of the ulcerated, putrid Sore Throat is introduced here.

The malignant, putrid Sore Throat was a disorder well known to the ancients, although Dr. Fothergill traces its first appearance and description amongst modern writers.

Neither the ancient nor moderns, until very lately, understood the true nature of the disease, nor the most efficacious manner of its treatment.

Celsus, Aretæus, Ætius, Trallianus, Paulus Egineta, and other ancients, have distinguished different species of the Sore Throat ; amongst which the present disorder appears to be described. The modern writers are, *Sgambatus, Cortesius, Ætius Cletus, Severinus, Heredia, Thomas Bartholinus, Fothergill, Chomel, Aurivillius, Huxham, Johnstone, &c.*

Some histories are related in the Philosophical Transactions, and in the *Journal de Medecine* : these, with the authors already mentioned in the former part of this essay, are the principal physicians who have written on the subject.

Notwithstanding the disease has been most accurately described above an hundred and fifty years, yet slow has been the progress of treating it successfully. This is common to the healing art ; for Hippocrates, Celsus, Aretæus, and Galenus, have well delineated morbid symptoms ; but how superficial and imperfect are their directions of cure, when compared to the present practice.

Many ancient medical prejudices are not at present eradicated, so intimately are they interwoven with modern knowledge ; nor the doctrine

doctrine of waiting for a critical termination of febrile diseases, in a certain number of days, disbelieved, although every day's practice proves their uncertainty and fallacy.

In the putrid, ulcerated sore throat, the doctrines of commencement, augmentation, *acme*, or height, and critical termination in recovery, death, or some other disease, in a certain number of days, seems to have been superstitiously adopted and credited. These notions, perhaps, in some measure, influenced *Fothergill*, *Huxham*, *Russell*, *Pringle*, and many others.* These days were always irregular, which shews no great uniformity in *nature*; but were they exact in their periods, yet, if more compendious and safer methods of cure are discovered, does not humanity demand their preference to the more slow, uncertain, or hazardous?

It

* Those who have argued most in favor of critical days have asserted, as a strong reason for *nature's* not observing the ancient periods in *fevers*, is owing to the application of *modern remedies*, which perverts the wise intentions of nature on the third, fifth, seventh, ninth, eleventh, fourteenth, &c. days. Mankind should be felicitated on the use of antimonials, bark, mineral acids, &c. which often promptly cure fevers without the medium of *critical days*.

It has been lately discovered, that such opinions and practices are erroneous, dangerous, or fatal to patients in the ulcerated *sore throat*, or *putrid fevers*; therefore, without waiting the *natural progress and termination* of the disease, by permitting *nature* to perform or direct her own operations, &c. the putrid tendency of the fluids, and the rapid relaxation of the solids, have been corrected, and restrained by methods, which, if more extensively applied to all *putrid diseases*, may become a most valuable acquisition to the art of medicine, and a blessing to the unfortunate sufferers.

*Symptoms or Signs of the putrid, ulcerated
Sore Throat.*

1. The throat feels sore, and swallowing is impeded, painful, or difficult.
2. On the mouth being opened, and the tongue pressed down, the uvula and fauces appear sometimes of a darker red than natural; at others, of a brightish red.
3. White or yellowish spots appear about the surface of the tonsil glands, which afterwards sloughing, form ulcers.

4. In

4. In some instances, the parts affected are swelled; in others, not. Abscesses sometimes, though rarely, are formed.
 5. The countenance is paler than usual, except in the young and plethoric, and shews evident marks of depression and languor.
 6. The eyes commonly appear more languid than usual.
 7. Alternate heat and chillness do not always accompany the other symptoms.
 8. The *pulse* is weak, small, quick, irregular.
 9. The animal spirits, or mind, are considerably dejected.
 10. The bodily strength is diminished, faintness is perceived, and the skin is dry.
 11. The head is sometimes affected with vertigo; but more, in general, is free from that sensation or pain, yet feels a degree of heaviness.
 12. The tongue is white, and rather moist, with little thirst.
 13. The urine is pale, or whey-colored.
- These are the general symptoms in the commencement of the disease, which, if promptly treated with spirit, are with facility removed;

removed ; but, if suffered to follow their successive *natural* course, then all the symptoms of exalted putridity appear in a few days.

Erysipelas and efflorescence appear on the neck, breast, arms, hands, &c, if perspiration be promoted.

A general tendency to putrescency, fetid breath and stools, haemorrhages, purple spots, diarrhoea, dysentery, subsultus tendinum, delirium, coma and death, mark the progress of the disease.

The last mentioned consequences, however, seldom appear, unless the disorder has been improperly or unskilfully treated in its commencement.

The disorder has no regular *crisis*. Although this is acknowledged, yet it has been treated as if acute and critical, and suffered to continue a certain number of days in expectation of some *critical* evacuation.

As the most destructive effects have been produced by mistaking the putrid, ulcerated, and malignant, for the true inflammatory sore throat, the distinctions of both should be accurately attended. Venereal ulcers of the throat have been likewise confounded with the putrid, though very different.

The distinguishing Characteristics of the Putrid, true Inflammatory, and Venereal Sore Throat.

1. In the true inflammatory sore throat, the pulse is strong and quick, if the disorder be sufficiently violent to accelerate the action of the heart and arteries.
2. The throat and fauces are considerably swelled with red inflammation, so that the tonsil glands nearly close; of course the swallowing is very difficult.
3. Neither the countenance, spirits, nor pulse, are depressed.
4. There are no white spots about the fauces.
5. No diminution of strength is experienced in the true inflammatory diathesis; for the arterial powers are all augmented.
6. The inflammatory sore throat is not *contagious*; and it is most common in winter and in the spring, when the air changes suddenly; whereas the putrid seldom appears, except in the latter end of summer and autumn, and is always infectious: in the former, consequently, individuals at a distance
from

from each other suffer ; in the latter, whole families, neighbourhoods, villages, towns, and cities, experience its dreadful ravages.

7. The true inflammatory sore throat terminates in resolution by the use of repeated bleedings, evacuants, and antiphlogistics ; or in suppuration, and in the evacuation of the matter forming the abscess : but in the putrid sore throat suppuration rarely happens, and *bleeding, evacuants, or antiphlogistics, kill the patients.*

Venereal Ulcerated Sore Throat.

1. Venereal ulcers are commonly seated near or on the tonsil glands, sides of the tongue, palate, &c.

2. No fever accompanies venereal ulcers ; nor depression of spirits, languor, &c.

3. Venereal ulcers not being acute, and destitute of febrile symptoms, are slow in progress, and commonly attended with other symptoms of the *lues venerea.*

4. The venereal ulcers are not contagious from the breath, nor epidemical : they do not ravage through families nor towns, but affect individuals only, without any concomitant

tant symptoms of acute inflammation or putridity.

5. Venereal ulcers of the throat happen in every season of the year, commonly from the disorder being originally ill treated or neglected.

6. The bark and antiseptics cannot cure venereal ulcers ; but fumigations of cinnabar, mercurial lotions, and a judicious mercurial course.

Though these distinctions are well known, and perfectly comprehended by all experienced physicians in this country, yet so many fatal errors have happened from a want of accuracy and knowledge in the diagnostic symptoms of the putrid, malignant sore throat amongst the inexperienced, that these explanations have not been considered superfluous.

Causes of the Malignant, Putrid Sore Throat.

1. The remote causes have already been investigated, which are, principally, some putrefactive effluvia contaminating the atmospheric air.

I

2. The

2. The causes, which give a continuance and fresh origin to this fatal disease, may, however, remain after the atmospheric air has been purified ; for the disorder being once received, it may be re-communicated by the breath, clothes, &c. of persons already affected : thus the disorder may proceed from family to family a long time after the original causes in the air have been dissipated.

The plague rages in a similar manner.

1. The *immediate* or *proximate* causes are, a sharp, corroding, putrefactive air received by the mouth and lungs in respiration. What are the constituent particles of this air, and the most rational means of its prevention, counteraction, or mutation into purer air, may be considered in a future publication.*

2. This contaminated air comes first in contact with the fauces, when respiration has been performed, either through the nose or mouth.

It is sufficiently *corrosive* or caustic to act on the external membrane of those parts, and raise little *pustules*, which are the small white spots mentioned : these detach the skin, corrode

* Experiments have been long making for this purpose.

rode the parts underneath, and form, from the separation of the putrid slough, the malignant ulcers.

3. A considerable portion of contaminated air, received into the lungs by being absorbed, is conveyed to the whole circulating fluids: hence the changed state of the blood.

4. This changed state of the blood tending to dissolution, relaxes all the muscular powers of the body; hence debility: its stimulating powers on the heart and arteries excite a quicker, though feebler, arterial action; hence attrition and a change in the uniting particles, heat, &c.

5. This *putrid-tending change* of the blood acting on the brain, its membranes, and the nervous system in general, is productive of a sense of dejection in the mind, and a diminution of power in the nervous system.

6. If the putrefactive causes act with great energy, *delirium* may be the consequence, by the changed acrid blood irritating the membranes, arterial and venal sinuses or system, the cortical and medullary substances of the brain.

A laxer

A laxer texture of blood, approaching to dissolution, is productive of debility and laxity in all the human functions, whether animal, vital, or natural.*

Prognostic of the Putrid, Malignant Sore Throat.

The prognostic of the disorder will be comprehended principally from the modes of cure adopted.

1. When the disorder is treated in the most improved manner, it is neither dangerous nor fatal.
2. If restrained immediately by bark and antiseptics, it is cured in a very few days.
3. The cure being properly conducted, the disease diminishes from the first exhibition of the remedies, and continues to decrease until the cure is accomplished, and generally without any critical evacuation.

4. In

* In the putrid disease of hot climates, on the first apparent attack of the disorder, many patients are so dejected, and feel such an inexpressible weakness, as to consider and believe the disease fatal; which pre-sentiment has been very often verified, notwithstanding the most powerful modes of cure have been adopted. The mind has acted so potently on the body as to induce a fatal despondency, which neither remedies nor reasoning could counteract.

4. In the foregoing prognostics, it is supposed that the disorder should be skilfully treated on its first attack, or while recent.

5. If the disease be mistaken in the first instance, and bleeding, saline, or antiphlogistics of nitre, &c. be administered, death is generally the consequence.

Purple petechiæ, delirium, nasal, or other hæmorrhages, from the dissolved and putrid state of the blood, putrid diarrhoea, dysentery, &c. mortifications of the viscera, &c. &c. are induced, and the patient, frequently sensible to the last moments, with diminished circulation, faint respiration, syncope, cold sweats, &c. expires.

6. The same has happened, though in a less degree, when the treatment has been conformable to the doctrines of *Fothergill*, *Huxham*, *Pringle*, &c. chiefly, as far as I have been able to observe, from attending more to the fever than putridity, and omitting the bark until it was too late to be serviceable. Several instances of this nature I have been lately called to prescribe for, when the disease was too far advanced, and above the reach of all medicine.

7. The

7. The longer the disorder has ravaged in the constitution, and the more violent the symptoms appear, so much the less expectation of success in its treatment.

8. Leaving the disorder to *nature*, as it is called, is better than prescribing bleeding and evacuant antiphlogistics, &c. for these commonly destroy the patient.

9. The defective modes of treatment recommended by *Fothergill*, *Huxham*, *Pringle*, &c. are preferable to submitting the disorder to *nature*, and will succeed in some seasons, if the disease be not highly malignant; but the not immediately ordering the bark, may suffer the disorder to become so unmanageable as to resist the most powerful remedies. The disorder continues from five, seven, eleven, or twelve days, according to those writers, with the risk of dangerous symptoms; whereas, if the antiseptics be immediately directed, bad symptoms rarely appear, and it is cured commonly in three, four, or five days. Which is most eligible requires no commentary.*

* The reason of mentioning those practitioners whose authority has had great weight and influence in medical practice, is not from any disrespect; for they have justly merited the esteem of

The Methods of preventing the Infection of the putrid, ulcerated Sore Throat.

The preventive methods of counteracting this contagious disorder are of two kinds, domestic and medical.

The domestic prevention comprehends the modes already described when the disease is present: to which may be added, the immediate removal from the situation where the disorder actually predominates, to a distant part, where it does not exist.

Those who are obliged to remain in the midst of the surrounding evils, should avoid, as much as possible, patients already infected.

After cleansing the bowels with any light opening medicine, *Glauber*, *Rochelle*, or *Epsom salts* excepted,* a tea-spoonful of pow-

of society in eradicating some of the prejudices of their predecessors: and it is no reflection that they were unacquainted with many newer discoveries. The motive for introducing the names of those physicians, is in consequence of frequently observing, that when patients have died of this disorder, practitioners have quoted and appealed to the writings of *Fothergill*, *Huxham*, *Pringle*, &c. in support of an ineffectual practice.

* These salts are adapted to the true inflammatory diseases, but do mischief in the putrid: all learned practitioners know the reason; namely, that they are relaxant to the whole habit, &c.

dered bark may be taken in a glass of red wine and water, with a little grated ginger, three times a day.

Quilled bark, ginger, cinnamon, cloves, allspice, pepper, or any aromatic, may be continually in the mouth, and lightly chewed, that their effects may pass to the fauces and stomach in conjunction with the saliva.*

The chewing of tobacco, though disagreeable to many, or smoking the dried plant, are useful preventives.

What relates to houses or rooms, is fully considered in the observations and methods of cure contained in this essay.

Tea, and all watery liquids, should be very sparingly drank, while infectious diseases spread their baneful influence.

An extra glass or two of wine, spirits, and ginger tea, punch, &c. are not improper; for

* A relation of mine, in the medical department, last war, was ordered up the river *Gambia*, in Africa, where he was in his voyage three weeks lying with the men in an open boat, or only covered with the sail forming an awning. The worst pestilential diseases are very common in that country; but he effectually preserved the health of the men by giving them each a glass of Madeira wine three times a day, on condition that they should drink it mixed with a dram of powdered bark.

for they are often capable of resisting the power of the disease.

The common meats, but not broths, should be received as aliment, according to the season; less in very hot, more in cold weather.

All acids, and acid fruits, may be moderately used, provided there be no contra-indication, as disagreement with the stomach, cholic, purgings, &c.

Whatever strengthens and invigorates the constitution should be adopted; whatever weakens or enervates should be avoided: therefore all bitters, stomachics, and tonics, are beneficial; nitre, and all cooling salts, injurious.

The Cure of the putrid, malignant, ulcerated Sore Throat.

1. The patient should be removed to the uppermost part of the house, or to a place remote from that in which the infection rages. A lofty is preferable to a low situation.

2. The fauces, or parts affected, should be gargled frequently with water acidulated with

Q 2

elixir

elixir or spirit of vitriol, port wine, and water.

3. The stomach and intestines should be cleared by an antiseptic laxative, composed of infusion or decoction of sena and tamarinds, cremor tartar, and some Daffy's elixir or tincture of sena, preparatory to prescribing the bark, which may be repeated occasionally.*

4. The bark, then, is to be given in substance: an ounce, or an ounce and a half of its powder, with a quarter of an ounce of aromatic spices, may be put in a quart bottle; to which may be added half a pint of Madeira wine, red port, or mountain, and the bottle may be afterwards filled with decoction of bark, strong chamomile tea, or water, with a sufficient quantity of the oil or elixir

* As it is intended to render this little essay as useful as possible, the plainest directions are given, that persons distant from medical assistance may know how to proceed in the first moments of the disease appearing, or before they may be able to acquire medical assistance. Tamarinds boiled with sena, cremor tartar, and rhubarb; lenitive electuary and cremor tartar; manna, rhubarb, and cremor tartar, &c. are proper laxatives; but Rochell's or Glauber's salt, sal polychrestus, or such antiphlogistic purgatives, are improper in putrid diseases.

elixir of vitriol, to give a grateful acidity to the composition.

Three table-spoonfuls of this mixture may be taken every two, three, or four hours, according to the violence of the symptoms.

5. Previous to swallowing any of the mixture, the parts of the affected throat should be cleansed with the gargles already mentioned, and the patient should be kept from lying in bed, unless when much fatigued by sitting up.

6. The *saliva*, and all humidity in the mouth, should be spit out, and never suffered to pass into the stomach.

7. The sick patient's apartment should be kept cool, and the *air* is to be renovated frequently by opening the door and windows; but a stream of wind should not be suffered to pass in a direct line to the patient, but conveyed in a circular direction through the chamber. The weather and temperature of the air is, however, to be considered in the introduction of fresh air.

8. *Vapors* of vinegar, with spirits of wine and camphor, brandy, or rum, spirituous lavender water, or Hungary water, should

be diffused through the room, and held near the patient's mouth, that their antiputrescent qualities may be received into the lungs, &c.

Glauber's spirit of sea salt, or the muriatic acid, mixed in boiling water, is a powerful antiseptic; but cannot be safely conducted but by the advice of medical practitioners.

Small portions of the fuming spirits of nitre; oil of vitriol; Glauber's spirit of sea salt, united with alcohol, or ardent vinous spirit, forms excellent antiputrescent æreal fluids; but require chemical knowledge in accommodating them, to medical practice.

Glasses must be used containing the vinous spirit, and the acid preparations should be cautiously dropped; an effervescence ensues by a light sand heat, and the air diffused is highly salutary in every species of putrid fever, diarrhoea, dysentery, &c. &c.

Explosions of gunpowder are useful.

The burning of tobacco, fragrant gums, or resins, as frankincense, myrrh, resin, pitch, benzoin, &c. aromatic or nervine herbs, as lavender, rosemary, &c. assist in purifying the air.

9. The

9. The bed-clothes, curtains, and all linen, cotton, or flannel, should be repeatedly removed, fumigated with tobacco, washed, purified on the top of the house, if convenient, and the body linen of the patient should be daily changed, not only in this but in all putrid fevers.

10. The liquids in the mouth, after gargling; the excrements, urine, and all impurities, should be instantaneously excluded from the sick chamber.

Handkerchiefs for wiping the mouth should be sprinkled with camphorated spirit of wine, Hungary or lavender water, or vinegar, brandy, &c.

11. The drinks most proper are red-wine negus, tincture of roses, imperial, which is a composition of cremor tartar dissolved in boiling water poured on a little lemon peel;* but the acid of vitriol is best.

Vinegar and water, juices of currants, currant jelly, gooseberries, raspberries, apples, plums, damsons, floes, oranges, citrons, lemons, or juices of any acidulous fruits united with

* About a tea-spoonful of cremor tartar makes a pint and a half, or quart of this drink.

with water, and sweetened with honey or sugar, are proper.

The vitriolic acid is, however, the most powerful, and should be preferred to all others, unless there be a *difficulty of breathing* accompanying the other symptoms.

Twenty drops of spirit of vitriol, or two tea-spoonfuls of the acid elixir of vitriol, are sufficient to acidulate a quart of water, or wine and water; for the acid drinks should not be too powerful, lest they too much constringe the fibres, or contract the excretory tubes, and occasion an unnecessary sensation of thirst.*

Nitrous drinks, or nitre and barley water, and all *diluting teas*, &c., are injurious in this distemper.

No drink whatever should be swallowed till the mouth and throat have been previously well gargled.

12. The separating sloughs of a putrid nature in the throat should be assiduously removed,

* As these acids are different in point of strength, the organ of taste should determine the quantity of acid necessary.

moved, either by the gargle, forceps, or by lint tied on a skewer.

13. If abscesses form, which, however, not frequently happens, when suffered either to break, or, if opened by a lancet, the matter issuing should be carefully excluded through the mouth, lest the putrid particles descend and injure the stomach.

14. During the disease, the patient should be seldom suffered to sleep any length of time, but frequently urged to gargle.

15. If the surface of the tongue, interstices of the teeth or gums, be covered with brown or livid fur, the gargle of borax should be used; and these parts should be well deterged.

16. Animal food of every sort, as mutton or *veal broth, beef tea, &c.* should be absolutely forbidden. At a time when neither deglution, digestion, chylification, nor sanguification, are regularly performed, there requires little solicitude for food, which, if even taken, cannot prove nutritious.

Panada made with bread or rusks, with wine, roasted apples, or some bread soaked in red wine, fago, falop, tapioca, simolina, sea-

sea-biscuit powder, &c. with a little wine, are all the foods necessary in this or any other putrid disorder.

The successful treatment already delivered pre-supposes that medical assistance was early solicited, and judiciously applied: under which circumstances, the disorder hourly diminished, and, in the course of two or three days, was perfectly cured.

It frequently happens, however, in practice, that the disease has been misunderstood, neglected, or injudiciously managed from its first appearance: in this case medicine should more vigorously oppose the dissolving tendency of the fluids and the debility of the solids, by administering the antiputrescent remedies as often as the patient's stomach can bear them without rejection.* It is worthy of observation, that patients who never before

* It is possible, after receiving the infection, that, like the small-pox, the venomous particles may circulate two, three, or more days in the blood before the symptoms appear sufficiently evident to determine the disorder is present: when, however, the disease is epidemic, there is strong presumption of its possibility, and no mischief can accrue from using the preventives, unless contra-indicated from some important cause. I caught this disorder in 1790, by attending a patient; it was as violent as ever experienced, but I was cured by the methods here recommended.

sore could admit the bark, take it in immense quantities when laboring under this putrid disorder, without any inconvenience whatever, and with the most salutary advantages.*

If *hæmorrhages*, *purple petechiæ*, *efflorescence*, &c. appear, as their causes are similar to all the other putrid symptoms, so should be their treatment.

Bleeding generally urges on all the fatal symptoms, and can seldom be repaired by the most skilful practitioners.

In colliquative, putrid purgings, or dysentery, symptoms which are often fatal, the irritating acrid causes being evacuated by rhubarb,

* *Bark and vitriolic acids* are frequently contra-indicated in *difficulty of breathing*, *asthma*, *coughs*, &c. and various diseases of the thorax or its viscera, experience having found them injurious, by producing difficult respiration, pains in the chest, strictures, &c. but in such a putrid tendency of the fluids, all inferior considerations should give place to the threatening danger of this disease, and, unless great difficulty of breathing, stricture, &c. should ensue, there can be no objection to attempt saving the patient's life by the remedies. In very nervous patients, with *tense, rigid fibres, contracted bile ducts, constipation*, &c. where the bark and tonics have constantly disagreed; in the putrid sore throat they have produced none of their usual effects, but, on the contrary, have succeeded.

Other preparations of the bark may be directed, according to the urgency of symptoms, and judgment of the prescriber, without the vitriolic acid.

barb, and tremor tartar or any other eligible, antiseptic laxative, the bark, with aromatics, extract or decoction of logwood, red port, simple and spirituous cinnamon water, with the sweet elixir of vitriol, instead of the acid, or Hoffman's anodyne liquor, may be prescribed, which is both antiseptic and tonic.

Though *opiates* have already been objected to, yet there may be circumstances that require their admission, joined with a solution of *extractum ligni Campechenis, pulvis terra Japonicae, &c.* with simple cinnamon water, and some warm invigorating cardiac tincture.

When the disease, from neglect, or bad management in the beginning, proves fatal, putrid purgings, cold sweats, extreme languor, faintness, and a mortification of the intestines, close the tragic scene. These I have found lately occur from practical observation, and by some few dissections *post mortem*.

Whatever other symptoms appear, not already enumerated, they should be treated according to circumstances, always recollecting *septic* and cooling saline medicines to be injurious; for on *antiseptics*, with cordials,

can

can alone be placed dependance, or any reasonable expectation of success.

In delirium, a strong camphor emulsion, made by rubbing with decorticated almonds, sugar, and afterwards with water, in both antispasmodic and antiseptic.*

Preparations and Remedies, which are frequently prescribed in the putrid Sore Throat, that should be rejected.

Though enough, perhaps, has been advanced concerning the successful treatment of the disorder, contrasted with that which is either ineffectual or injurious, yet a brief recapitulation of the whole may not be unacceptable.

I. Class of improper diluting Drinks.

1. Tea, and all watery infusions, unless acidulated with muriatic, vitriolic or vegetable acids.

2. Water

* Ten grains of camphor, dissolved in 3*j. sp. vin. rect.* and united with *polv. gum arab.* 3*fls. aq. pur.* 3*ij. Sacch. alb. q. s.* is quite superior to the *julep. e campb.* for most purposes, when camphor is necessary.

2. Water gruel, barley water, or any farinaceous drinks, or what are named *diluters.*
3. Almond emulsion, capillaire syrup and water, or orgeat.
4. Rennet whey, wine whey, and all *warm, sudorific* drinks.

II. Class of improper saline Remedies.

All saline preparations, composed of the *vitriolic acid*, and the *vegetable or fossile alkali, &c.*

1. Glauber's purging salts.
2. Epsom salt, or *sal amarum catharticum.*
3. Rochelle salt.
4. Sal polychrest.
5. Soluble tartar.
6. Sal enixum.
7. Arcanum duplicatum.
8. Nitrum stibiatum.
9. Nitrum vitriolatum.
10. Sal nitre, or *sal prunell.*

III. Class

III. Class of Remedies, composed of the Vegetable Acid, and the Vegetable, Fixed, Volatile Alkali, which are improper.

1. *Saline draughts*, composed of salt of wormwood, and lemon juice.*
2. *Spiritus Mindereri*, formed from vinegar and volatile salt.
3. *Sal diureticus*, made from acetum and fixed alkaline salt.
4. *Volatile saline draughts* from the union of lemon juice and the volatile alkaline salt.
5. *Magnesia alba* is improper while acids are administered, as it forms a neutral salt.
6. *Testaceous powders and confectio cardiacæ* must not be given for the same reason.

The

* The *saline draughts* that every family are taught to make from salt of wormwood, lemon juice, &c. which has been used ever since the times of *Riverius* and *Sylvius*, a period of above an hundred years, with a most credulous veneration, may be drank in pints without any very sensible effect by persons not suffering under *putrid diseases*: what use a two-ounce draught of this sort can be supposed to possess in any important disease, need not be mentioned. When learned physicians adopt this preparation, it is with intention to do little or nothing, and is an innocent remedy in trifling diseases, though improper in putrid, or dangerous.

The general intentions of the *three* foregoing classes of medicines are either to empty the intestinal canal, to diminish the febrile impetus of the blood, allay heat and thirst, to cool the whole body, promote perspiration, and to dissolve the viscid crisis of the blood, &c. &c.

All these practices can be clearly proved to be founded in *blindly* following medical fashions, rather than cool reflection on the nature of putrid diseases, unless in particular instances.

These remedies, though frequently prescribed, are, in different degrees, *septic*. They are known to diminish the circulating powers, debilitate and relax the stomach and nervous system, cool, &c. and certainly are more likely to promote than correct, or prevent the putrefactive dissolution of the fluids.

They are admirably calculated for the *true inflammatory* diseases in their commencement, progress, and augmented state ; but are exceptionable in the putrid stages.

When the blood and fluids are approaching to a state of dissolution, certainly no physician would

would prescribe what must give additional vigor to the disease, and injure the patient.

All those *saline* cooling medicines, as they are nominated, are supposed to render the blood *more fluid*, consequently opposite to the indications in putrid diseases; which are, to *check* the dissolution of the blood, invigorate the solids, and resist the putrid-dissolving acrimony.

If, however, it could be supposed that saline draughts, &c. produce no mischief, it appears very reasonable that they are not likely to prove beneficial. In such an acute putrid disorder as the putrid sore throat, in which there is neither time for omissions, nor superficial practice, it is a desperate game to hazard the lives of mankind, by losing the earliest opportunities of curbing or counteracting the destructive tendency of the disease.

It has been observed, that the heat of putrid diseases is caused by a state of the blood different from the true inflammatory; therefore if bleeding, evacuants, saline coolers, are proper in the inflammatory, which no physician doubts, bark, vitriolic acids, &c. are

injurious ; if these last remedies absolutely cure putrid diseases, stop mortifications, &c. the proofs of which are numerous, saline coolers, by acting oppositely, are likely to do mischief.

No arguments whatever can induce several learned physicians on the Continent to depart from the doctrines they have imbibed ; one often succeeds another, not only in situation and fame, but likewise in sentiments. They pronounce it *charlatanerie* to deviate from the precepts of their universities, schools, or professors, which they blindly follow with implicit zeal and confidence, as though the art of medicine could not receive any improvement, or that innovations were criminal.

If the boundaries of empiricism, and rational, regular medicine were stated judiciously, those who follow any *beaten track* of medical practice, without reflection on times, seasons, differences of constitutions, ages, sexes, &c. wherever educated, deserve the denomination of *quacks* : those who prescribe remedies with the most satisfactory reasons

reasons improved medicine affords, merit alone the appellation of *regular physicians.**

Other exceptionable Practices.

1. Bleeding.

2. Nitrous or other improper gargles.

* No sensible regular physician can suppose his knowledge or dignity consists in being educated in any particular university, college, or country; nor will any but those who have nothing else to recommend themselves, assume importance on such a superficial foundation. The acquisition of knowledge does not depend on place, nor long residence in any learned seminary; but in the industry and mental endowments of the student, and a fervent inclination to avail himself of every opportunity of acquiring the practical as well as theoretical principles of the art. It must, however, be confessed, that large cities and hospitals are the grand scenes for the attainment of practical knowledge, when under the guidance of truly learned physicians and surgeons. For my own part, after reviewing almost every hospital throughout Europe, I am convinced the whole art of medicine is capable of much improvement; and I consider it the duty of physicians, in all countries, to be as ready, at any time of life, to receive liberally instruction, as to diffuse useful knowledge. I differ totally from those learned gentlemen who are displeased at being informed of what they did not before understand.

These observations are intended for those medical practitioners who build their reputation, and affect dignity on the fame of the school, college, hospital, or professor from whence they received their education, as though preceptors or places were accountable for the abilities of scholars.

3. Vomiting.
4. The detention of patients in bed.
5. Blistering.
6. Promoting perspiration by James's powder, tartar emetic, &c.
7. Checking purgings suddenly by opium.
8. Not cleansing the ulcers of the throat.
9. Suffering the patients to sleep.
10. Not freely admitting fresh air.
11. The giving animal broths, milk, beef jellies, &c.
12. Volatiles.
13. The depending upon ineffectual remedies.
14. The not administering the bark, &c. on the first appearance of the disease.

Necessary Remedies.

LAXATIVES.

1. Antiseptic laxatives of fenna.
2. Tamarinds.
3. Cremor tartar and rhubarb.
4. Tincture of fenna.
5. Infusion of chamomile flowers and senna.
6. Compound powder of senna.

Gargles.

1. Gargles, composed of elixir of vitriol, acid or spirit of vitriol and water.
2. The tincture of roses, &c.
3. Tincture of myrrh, tincture of bark, and camphor julep.
4. Vinegar and sage tea.
5. Currant jelly, or currant juice with water, &c.
6. Red port and water.

Antiputrescent Remedies for internal Use.

1. Bark in powder.
2. Aromatic spices or powdered ginger.
3. Extract of bark in cinnamon water.
4. Huxham's tincture of bark added to mixtures.
5. Decoction of bark with the acid of vitriol.
6. Powder of snakeroot with the bark.
7. Tincture of snakeroot. These are rarely necessary.
8. Acid elixir of vitriol, from 10 to 15 drops in a dose.
9. Sweet elixir of vitriol, from 40 drops to one dram and a half.

10. Hoff-

10. Hoffman's anodyne mineral liquor, from 20 to 60 drops.
11. Camphor.
12. Bitter spirituous tinctures.

Drinks.

1. Tincture of roses.*
2. Water acidulated with the acid of vitriol.
3. Lemonade.
4. Cremor tartar dissolved in water, called Imperial.
5. The acid juices of fruits with water.
6. Currant jelly dissolved in water.
7. Orange juice and water.
8. Red port, or red port and water, negus, &c.

Remedies to remove or counteract the Causes of Purgings.

1. Powder of rhubarb, to 20 or 30 grains.
2. Extract of logwood, dissolved in simple cinnamon

* This composition has been recommended in putrid diseases above an hundred and sixty years. Poterius says, " *Usus est in febribus putridis, cor exhilarat, & ardorem febris compescit, fitim etiam extinguit.*"

cinnamon water, two drams of the former to six ounces of the latter.

3. Japan earth, powdered in cinnamon water, two drams to six ounces.

4. Dulcified elixir of vitriol to a teaspoonful and a half, with any of the before-mentioned compositions.

5. Hoffman's anodyne liquor to 60 drops in simple cinnamon water.

6. Opiates, if absolutely necessary.

Domestic Management.

1. Purifying the air of the room.

2. Removal from the infected place, or to an upper airy part of the house.

3. Fumes of vinegar.

4. Explosions of gun powder.

5. Burning of Frankincense.

6. _____ Benzoin.

7. _____ Pitch.

8. _____ Resin.

9. _____ Shavings of yellow saun-
ders.

10. _____ Tobacco.

11. _____ Lavender, rosemary, &c.

Other

Other Regulations in the Sick Chamber.

1. Patients to sit up as much as possible.
2. Linen to be daily changed.
3. Bed curtains to be taken down;
4. All woollen or cotton clothes to be removed.
5. Few visitors admitted.
6. All evacuations to be immediately carried out of the sick room.
7. The room to be kept cool.
8. No broths or animal diet whatever to be admitted.
9. Sleep never to be long indulged.
10. The mouth and throat to be frequently gargled.

Foods or Aliments.

1. Panada, with wine,
2. Sago.
3. Salop.
4. Simolina.
5. Tapioca.
6. Rice.
7. Barley pudding.
8. Roasted

8. Roasted apples and bread.
9. Any acid fruits with bread soaked in wine.

These remedies or foods are to be occasionally prescribed, excluded, or varied, according to the judgment of medical practitioners: every one has a just right to administer whatever, in repeated instances, may have been found salutary, only recollecting, that all septic medicines are improper in disorders of a putrid nature, and that single instances of success ought never to be a guide for general practice.

*The Treatment of Children in the ulcerated
Sore Throat.*

As the disease frequently infests children, a mode of cure should be adopted, in which, though the general principles may be the same as in the adult, yet some deviation is expedient.

Children abound commonly with acidities; milk composes the principal part of their fond; therefore neither the vegetable nor mineral acids are so proper as the bark, given in

in powder, mixed in milk, or a solution of the extract of bark in simple cinnamon water.

Children cannot gargle: in some, the ulcers may be touched with acids; in others not: therefore the intestines should be occasionally emptied with *pulvis rhei*, *pulvis e sene compositus*, or such like laxatives. In other respects, all the precautions and general methods of treatment are useful.

After the disorder has terminated favorably, while the patient feels debility in a convalescent state, the bark, steel preparations, air, exercise, and a restorative nutritious diet, should be prescribed.

If any hectic complaints, as night sweats, consumption of body without cough or ulcerated lungs, flushings or heat after meals, slow irregular nervous fevers, &c. should attack the patient, the causes are, in general, a tendency to scirrhosity in the liver, mesenteric, or other lymphatic glands,* an obstruction in the mouths of the lacteals, from laxity or stricture, so as to hinder nutrition, pervert

se-

* These I have frequently found in the dissections of those who have died of hectic complaints, unattended with pulmonary consumption, &c. after putrid and other fevers.

secretions, excretions, and digestion; vitiate chylification, or sanguification.*

In laxity, steel preparations, joined with bitters, admirably succeed; but in glandular scirrhosities, or obstruction, the mineral alteratives, such as cinnabar with antimonials in small doses, Æthiop's mineral, Plummer's pill, or from a quarter to half a grain of washed calomel, every night, or two or three times a week, with or without some bitter laxative of the aloetic kind, bid the fairest to remove the causes.

It may be observed, however, that mercurials alone do not so effectually remove obstructions in the lymphatics, resolve scirrhouſe lymphatic glands, as when combined with sulphur, or preparations of antimony: this fact has been many years proved by abundance of experience.

Thus have been delivered free sentiments on a disorder that has lately proved fatal in various parts of England, particularly in and about London. If the doctrines advanced be judiciously and candidly applied, they may become very useful, and preserve many lives.

When

* I had an intermittent pulse for some time, after the disease, which absolutely arose from inanition.

When the malignant sore throat appears, it should be immediately cured, by which the infection will be much prevented from spreading; because it is not so contagious while recent, as when suffered to continue and increase its putridity several days, in hopes of a remission of the febrile symptoms, or a crisis. The former method prevents, the latter promotes, the malignant contagion. By the *old* treatment it is likely to ravage through families, towns, and cities; by the *new*, individuals only suffer, and mankind in general are preserved. There is great reason to conclude, that a similar practice, and preventive method, would effectually check every species of putrid disease, and perhaps the plague itself.

*A brief Account of the Phrenitis Maligna, or
New Species of Acute Madness, which has
lately prevailed.**

1. The patients are seized with a species of delirium without fever.

2. They

* This disorder has not been described by Sauvages, Lieutaud, Cullen, nor any other nosologist.

2. They talk wildly, expressing false fears, and describing false images of the mind.

3. No heat, thirst, discoloration of the tongue, cold shiverings, or any other febrile symptoms appear.

4. Sometimes they are melancholy; at others so obstreperous as to require three or four persons to hold them.

5. The pulse is never, or rarely, quick, but, on the contrary, is depressed, and slower than usual; some have beat so slow as forty in a minute.

Bleeding shewed the blood not to be in an inflamed, but lax state; and if repeated, did manifest injury.

Evacuations of vomiting, sweating, and purging, answered no purpose, except to lower the patients, and prolong the disease.

The disorder appeared so similar to a true maniacal affection, which is a delirium without fever, that the straight waistcoat was, in some instances, proposed, or the removal of patients to a mad-house.

It differed, however, from the true inflammatory phrenitis, being destitute of fever; and

and from madness, because it has happened to numbers, and terminated in a few days.

From many circumstances, it appeared of the putrid kind, absorbed from putrid *mias mata*, and determined to the brain and its membranes.

The remedies which have cured the cases I have seen, are, camphor in large doses, and, after a proper laxative, the *cortex Peruvianus*.

Since I have been physician to the St. Mary-le-bone Infirmary, many instances of the *phrenitis putrida* have been received into the house, and have, in general, been cured by the antiseptic plan, as likewise nervous fever, and the *phrenitis nervosa*.

THE
CAUSES
OF THE
GREAT NUMBER OF DEATHS
AMONGST
ADULTS AND CHILDREN,
IN PUTRID, SCARLET FEVERS,
AND
ULCERATED SORE THROATS,
EXPLAINED.



THE HISTORY OF THE
CIVIL WAR IN ENGLAND
IN SEVEN VOLUMES
BY
THOMAS BRADSHAW
LONDON
PRINTED FOR
JAMES DODSLEY
AT THE SIGN OF THE
CROWN IN LUDGATE-HILL
1750

DEDICATION.

TO

THE RIGHT HONORABLE AND HONORABLE
THE NOBLEMEN AND GENTLEMEN,
DIRECTORS AND GUARDIANS
OF
THE POOR OF THE PARISH OF
ST. MARY-LE-BONE,

WHOSE liberal sentiments and humanity, in the cause of the distressed, merit the approbation of all mankind, this small tribute is most respectfully dedicated, by their most obedient, humble servant,

Saville Row,
June 20, 1793.

The Author.

Индукционные

INTRODUCTION.

THE causes of so many deaths happening in *putrid diseases*, will be briefly explained in the following short tract, which was not intended for immediate publication; but the fatality of the present alarming *scarlet fever*, and *putrid sore throat*, not only amongst children, but adults, urged its necessity;—*in tempore, quod rerum omnium est primum.*

The language of the performance has not been so much attended to, as the importance of the subject: if obscurity, therefore, has been avoided, and the intelligence delivered be sufficiently perspicuous for all classes of readers to understand, the Author's intention will be fully answered.

The

The *putrid disorders* are so rapid in their fatal ravages, in many instances, that all the world should be in possession of the most effectual methods, of not only preventing and repelling their attacks, but of curing them in the promptest manner.

If these disorders be misunderstood, and ill-managed; or, if the most effectual modes of treatment be not spiritedly adopted, during the first four and twenty or forty eight hours from their commencement, the utmost exertions of human skill may fail in every attempt to cure; to many melancholy instances of which, particularly amongst children, I have lately been a commiserating spectator, when called too late to be serviceable. On the contrary, if the disorders be well understood, and properly treated in the first moments, they are easily cured, and few, very few, or none die, except those whose viscera

were unsound, or who labored under some previous disease.

The success attending the subsequent treatment in these disorders at the *St. Mary-le-bone Infirmary* and in immense practice for a period of near thirty years before I became physician to that humane receptacle, cannot be too publickly known.

Several years ago a treatise was published on the cure of the malignant ulcerated throat, with objections to fourteen erroneous, yet common methods of treatment; but as that book contained many reasonings more adapted to the perusal of the learned in the profession than the public in general, this production was thought expedient; which, it is presumed, will be easily comprehended by every capacity.

i. It

1. It begins with observations on the fatality of the disease.
2. It shews the causes of the fatality.
3. It explains the improved method of treatment, as successfully practised, in many hundred instances, at the *St. Mary-le-Bone infirmary*, with all the prescriptions used; to which is added, an English translation of the remedies.
4. A review of the most exceptionable practice of many esteemed authors in putrid diseases is introduced.
5. All the objectionable modes of treatment are extracted from the former treatise on the malignant sore throat; and the domestic management and remedies are added.*

* The reader is referred to that treatise.

6. The

6. The management of the *scarlet fevers* of children, when accompanied with the malignant, ulcerated, sore throat, is lastly considered, which has so lately proved *fatal*, more by erroneous practices than the disease. As it is a tender point to condemn any gentleman's method of practice in particular, all individuals are spared, while the public good is promoted by general observations.

Such are the outlines of this concise practical performance. If it should prove as beneficial as the author wishes, thousands of lives may be annually preserved from the ravages of contagious, febrile, and putrid-tending diseases, and even the *plague* itself.

In the modes recommended in the following tract for treating putrid-tending diseases, from their first appearance, by *bark*, *vitriolic acids*, *cordials*, by a *stream of pure air* constantly supplied, and by excluding all *saline draughts*,

draughts, vomits, sweats, &c. &c. there is no occasion to wait for what physicians have called a *crisis*; for, the disorders being checked in the beginning, neither the usual dangerous symptoms, mentioned by all authors, nor a *crisis*, seldom happen, particularly in the malignant sore throat; for the disorder is cured with facility and certainty; it is nipped in the bud, and not suffered to branch out its deleterious influence over mankind.

Without a minute regard to all the symptoms, it is sufficient to determine, that the disorders have a *putrid tendency*, when received by *infection*, and when we perceive *heat*, *great debility*, a *weak pulse*, and *brownish tongue*. I have always considered, that medical practitioners have only *two points* in view to save the patients; namely, to check and counteract the evident and *destructive relaxation*, or want of *due cohesion* in the solids, and to

resist the *putrid-dissolving* tendency of the fluids; all other considerations are subordinate to these, and all modes of cure that are not directed to these points must be useless or injurious.

I am convinced, that, in many instances, the *vitriolic acid*, when properly diluted, would answer these purposes; and, lately, our infirmary practice has, in numbers, proved the fact: it is a much more powerful antiseptic than bark or any other.

A sensible and rational enquirer might ask, why the *vitriolic acid* has not been more universally known and adopted in putrid diseases, as above a century and half has elapsed since it was recommended by the chemists, and well known to cure those fatal distempers?*

The

* It must be remarked, that some skilful practitioners have followed the plans here recommended; but these are few, very few, in proportion to those who do not.

The answer shall be brief. The *Galenists*, who had seized all the power of regulating medical practice by their being professors of universities, and presidents and fellows of all the medical colleges in Europe, opposed, in the most acrimonious and malignant manner, the chemists, and all improvers; some chemists, through the extraordinary powers delegated to colleges by weak or uninformed princes, were fined and imprisoned, for daring to give many chemical remedies, on which, now, we place our greatest dependence. *Sed tempora mutantur.*

On the Continent, it is a notorious fact, that many of the faculty grow white-haired and bald-headed in errors and prejudices; and, when these die, there are others who have become grey-headed under the former professors, these step into the *cathedra*, or professor's chair, and pursue the old beaten tracks, without ever reflecting they are erroneous, or capable

pable of improvement; and, even if they perceive errors, they are too indolent to expose or attack them; but leave that task for those who follow in succession. If, however a man should not have sufficient penetration to discover, early in life, the defects of the medical art, and if he possess not a warm desire and spirit to remove them, he never will, in old age, attack, much less defeat the hydra-headed monster of hereditary prejudices;* some of the old *Galenical leaven* has remained, and will always remain, ready to raise a ferment, and excite an alarm on the introduction of every useful innovation.

It will be easy to perceive from whence, and by whom improvements, however important, have been and are opposed; hence

* I am very happy to see that my learned and much respected friend, Dr. Tatbam, of the university of Oxford, has attacked, with great erudition, many prevailing errors in university education. In my *Schola Medicinæ*, it will be proved, that the present general plans of medical education are radically defective, and proposals will be given for the purposes of reformation.

hence it will appear, why many ingenious men have been intimidated from promulgating important discoveries; for it requires more determined resolution than falls to the lot of every man, to attempt the introduction of new discoveries in a profession, where so much learning and various knowledge must be possessed by the different individuals, who compose the body corporate.

The following little tract, it should be observed, is not the language of inexperience nor chimerical hypothesis, but the result of above thirty years close observations, on thousands of practical facts; nor will the promulgation of the doctrines advanced, be ever relinquished, until the safety of mankind, laboring under putrid diseases, be more permanently established.

ON THE
SUCCESSFUL METHOD
OF TREATING
PUTRID, MALIGNANT, AND INFECTIOUS
HOSPITAL FEVERS,

&c. &c.

THE method of treating the *sore throat*, when *malignant*, *infectious*, *ulcerated* and *putrid-tending*, has proved very successful, in many hundreds of instances, since the first publication of the essay in 1788: indeed so *successful*, that if the remedies recommended be timely applied, and the fourteen *unsuccessful* and *incongruous*, though too common practices, be avoided, the disorder is, to a certainty, curable. It would, however, be disinguing the truth, if it were not asserted, that in an extensive course of practice, I have observed many have fallen, and do still

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fall

fall victims, through a continuance of those erroneous modes of treatment, which have been so freely censured in the essay on the malignant, putrid-tending sore throat. *Bleeding*, in some instances, has been prescribed; *bleeding!* the most certainly destructive of all the bad practices enumerated. *Saline draughts*, *neutral salts*, a *cooling regimen*, have been prescribed, and powerful relaxing perspirations excited in the beginning of the disorder, and the bark has been given—given when it was *too late* to be serviceable; by which numbers have absolutely lost their lives, who, if they had been treated, in the first stage of the disorder, by *bark*, *vitriolic acids*, *cordials*, and *tonics*, with the admission of *pure air*, &c. might have been now living instances of the utility of the excellent and improved art of medicine.

Numerous facts of the *fatality* of the disease, when not *properly* treated, and many hundreds of instances of the disorder being generally curable, when *treated judiciously*, have made a strong impression on my mind: I have been filled with horror, on reflecting, that the former unfortunate events have been owing

ing to a perseverance in error, or to a want of information. Nothing can be more unpleasant than to censure the practice of others; for it commonly creates enemies; although the mal-practices may be destructive to the community: but there is a duty which every physician owes to society, superior to all other considerations; namely, the free discussion and exposure of all dangerous errors discoverable in the art, especially when improvements can be introduced, that may avert the fatality of a most dangerous disease; for what is more dangerous than the infectious and putrid?

After minutely examining the principal hospitals in Europe, namely in *France*, *Holland*, *Germany*, and all *Italy*, and observing the general practice in each, I can affirm, that *seventy* or *eighty* out of every *hundred* die of putrid-tending infectious diseases.

By having taken a survey of the whole practice most esteemed in Europe, if directed by an unprejudiced judgment, I hoped, there was some probability of improving the whole; for, by discovering and abandoning what is superfluous or ill-founded, and adopting what is supported by reason and successful practical

S 2. facts,

facts, the whole practice of medicine may undergo an entire revision, very conducive to the future welfare of society, and to the honor of the art. There are, in truth, few modes of cure in medical practice, that do not admit of considerable improvement.

In putrid-tending diseases, although much improvement has been effected, yet much remains still to be enforced. If, on a true statement of indisputable observations, from *seventy* to *eighty* out of one hundred, have died of putrid-tending infectious fevers, when treated in the manner approved of by the most eminent physicians in Europe, and that, *not eight* in one hundred have died, when treated by my method at the St. Mary-le-Bone Infirmary, *contrary to the common forms, contrary to those universally approved methods*; will any person presume to say, that there is not an extraordinary difference in the *dead list*? Will it not be acknowledged, that *saving above ninety lives* out of every hundred, by a new mode of treatment, is better than *losing* sev-enty or eighty in one hundred by the old methods, however sanctioned?*

* At the infirmary, by an estimate made, we prescribe for about 400 patients weekly; the annual amount of the practice there must be from 12 to 14,000 prescriptions.

It was necessary to declare these preliminaries relative to *putrid, infectious fevers*, previous to the introduction of the mode of practice that has been attended with extraordinary success at the *St Mary-e-Bone Infirmary*: and though the following plans of treatment have been constantly pursued for a period of thirty years in private practice; yet they were not so decisive, nor so satisfactory, as the reiterated facts, which have been exhibited for some years at an infirmary, sacred to humanity, and to the numerous wants of the indigent and helpless.

From the most decided conviction, attending many hundreds in the diseases called *putrid*, it may be affirmed, that thousands have perished, and do perish, through the prejudices imbibed from *Boerhaave's*, and other subsequent systems; and it is likewise affirmed, that as many thousands may be saved by relinquishing those prejudices.

After freely delivering these sentiments on disorders that have made, and do make, such dreadful havoc amongst *inferior mechanics, soldiers, sailors, and even amongst the higher classes,*

classes, while infectious diseases spread their destructive influence, the simple and consistent modes of cure, that have proved so very successful, shall be faithfully delivered.

The fevers called *putrid*,* are those, in general, that are *infectious*, capable of spreading their baneful influence from infected patients to persons not infected; who likewise, in certain stages of the disease, communicate the fever to others, and thus it may be justly called an epidemic acute feverish disease, arising from the reception of air contaminated with putrefactive particles,

These

* Some gentlemen, who are fond of disputing about mere words, deny that any putrid disease exists, because the word implies, corrupted; nothing, while it lives, can be said to be putrid or corrupt; ergo, there can be no putrid disease. I think life too short to spend time in idle disputation; but must observe, that the causes of putrid disorders, as they have been called, have arisen commonly from *animal* or *vegetable* *putrefaction*, and I cannot perceive any great impropriety in nominating a disorder from its evident and acknowledged cause: if, however, those who are fond of cavilling think otherwise, I have called these disorders *putrid-tending*, *infectious diseases*, which might be likewise objected to, as not sufficiently distinct; for all disorders that end fatally might be called *putrid-tending diseases*, because death is productive of putrefaction or corruption: the putrid are quite, however, distinct from the true inflammatory, as experienced practitioners well know.

These *putrid, infectious fevers* are distinguishable from the *true inflammatory*, from *nervous* and *intermittents*, by this one sign; namely, that the first are infectious, the latter not, besides various differences in the symptoms.

The *putrid fevers*, in which the methods of cure have proved so successful, have arisen, in general, from *air contaminated with the putrefactive particles of dead human bodies* in a state of *putrefaction*: where the exhalations of the putrid bodies tainted the surrounding air, and where the most decided putrescent appearances, amongst many hundreds of the infected, were soon perceived, as *brown tongue, heat, thirst, purple spots, &c.* therefore, it is presumed, no proofs of a successful practice can be exhibited more decisive in the cure of *putrid-tending diseases*, than the subsequent.*

The same plans of cure have not only succeeded in the malignant, putrid sore throat, and putrid fevers; but likewise, in a variety of remarkable instances of the worst species of the *confluent small-pox*, accompanied with *purple spots* in different parts of the body,

* The facts came before the humane guardians of the poor, for the parish of St. Mary-le-Bone; in consequence of which, a new infirmary is now building.

and with all those symptoms that have been,
and are always, considered fatal.

*The successful Mode of treating Putrid Fevers,
as practised at the St. Mary-le-Bone In-
firmary.*

1. On admission, the poor patients are put immediately into a warm bath, and thoroughly cleansed.
2. The cloaths they have worn are taken from them, and clean, sweet dresses, allowed by the infirmary, are put on.
3. They are then conducted to a clean bed without curtains.
4. The windows, some of which are made to swing in certain directions, are always open, as likewise the doors, winter and summer, in order that fresh air may be continually supplied, and the noxious air, and putrefactive particles may be excluded.
5. Fumes of herbs are diffused, with vinegar, &c. and gunpowder wetted, so as to make what is called wild-fire, is fired on shovels of red-hot coals.
6. All offensive smells are immediately removed by the nurses, and every effort is

exerted to purify the air, and exclude what is foul. Nothing contributes more to the cure of *putrid-tending diseases*, than the constant admission of a *stream of fresh air* through the apartments.

7. All the *fourteen erroneous and incongruous methods of treatment*, such as *bleeding, saline remedies, sweats, &c. &c.* mentioned in the Treatise on the malignant, ulcerated fore throat, are carefully avoided.

8. All *animal foods*, and even *broths*, are forbid. *Sago, salep, rice, panada, and wine,* are allowed, and given occasionally, in small portions, as food.

9. The *vitriolic acid* is mixed with water and sweetened, so as to make a pleasant, grateful drink, or the *tincture of roses* is used as common drink.

The acid of sea salt has been used, diluted with water; but, after repeated trials, it was found to occasion purgings, and, therefore, was excluded.

10. Other drinks are allowed, as mint and balm tea acidulated, barley water, rice gruel, &c. as circumstances may require.

*various diseases has the virtue of being
soft & common antidotes against them,
and soe easily digestible.*

Medicines given.

First. The antiseptic purging powder, composed as follows :

No. 1. Rx. Pulv. rhei 3ij.

—crem. tart. 3ij. f. pulvis statim sumendus in
pauxillo mellis, vel theriacæ communis.*

Or the intestines are opened by the following :

No. 2. R. Infus. sen. 3ijs.

Tinct. ejusdem 3ijs.

Pulv. crem. tart. 3ij. f. hauftus. †

Secondly. The antiseptic mixture composed as follows :

No. 3.

* Translation of the Prescriptions.

No. 1. Take of Powdered rhubarb 1 scruple.

—cremor tartar 2 scruples. Make a powder to be immediately taken in a little honey, or common treacle.

† Or :

No. 2. Take of Infusion of senna 1 and $\frac{1}{2}$ ounce.

Tincture of senna $\frac{1}{2}$ ounce.

Powdered cremor tartar 2 scruples, make a draught.

No. 3.

No. 3. Rx. Pulv. corticis Peruviani 3*ss.*

— zingiberis 3*j.*

Aq. pur. 1*lbj.*

Acid. vitriolic. dilut. 3*ij.* M. f. mistura, cuius capiat coch. i*ij.* secundâ, tertîâ, vel quartâ quaque horâ.*

To this mixture sometimes a little *brandy* or *tincture of bark* is added. If this preparation should disagree with the stomach, then three drams of the extract of bark in fourteen ounces of the decoction of bark, to which are added, two ounces of the tincture, and one dram and a half of the acid. vitriol. dilut. are taken.

To cleanse the mouth, fauces, and tongue, especially if incrusted, or, what is called clammy, or if the *brown thrush* appears; the following solution of borax is used; it will certainly cleanse the foul, brown, or blackish colored tongue.

No. 4.

* *Translation of the Prescription.*

No. 3. Take of Powdered bark $\frac{1}{2}$ ounce.

— ginger 1 dram.

Water 1 pint.

Elixir of vitriol, or diluted vitriolic acid 3 drams. Make a mixture, of which take three table spoonfuls every two, three, or four hours.

No. 4. Rx. Borac. 3ij. solve in

Aq. pur. 3vij.

Theriac. commun. 3ss. f. gargarisma sape lingue
vel dentibus adhibendum.*

The borax solution is applied to the tongue, and the part is gently rubbed; then with whalebone it is scraped, or by any other similar means.

The generality of patients are treated, as hath been related, from their admission into the Infirmary, until the putrid-tending fever is perfectly cured, by the means already mentioned, and above ninety, and sometimes ninety-five or ninety-six, out of every hundred, have been thus cured, which the Infirmary books fully testify, agreeable to my visiting book, and to the report of *Mr. Hooper*, house apothecary, who examined the hospital books to ascertain the number cured in every hundred. The putrid fever, by immediately checking its progress, seldom becomes very violent, and many dangerous symptoms, mentioned by authors, in its different stages, never appear.

* Translation of the Prescription.

No. 4. Take of Borax 2 drams, which dissolve in half a pint of water.

Treacle a table spoonful, make a gargle.

It may be remarked, if the putrid, malignant, and infectious fevers were not sometimes accompanied with *difficulty of breathing, cough, or asthma*, that we should scarce ever lose a patient.

Those few, who have died amongst many hundreds infected, were either very *old*, had *coughs, difficulty of breathing, or other symptoms, which have prevented the use of the bark and acids.*

Those who had *coughs, asthma, difficulty of breathing, or pleurisy*, took the following mixture; and, amongst these, though some few died owing to their not being able to take the bark and acids, yet many others have recovered.

No. 5. Rx. Camphor. 3j. salve in

Spt. vin. rect. 3ss.

Mucilag. gum. arab. 3vj.

Aq. pur. 3xvjs. M. cuius capiat coch. iij. testicula
quaque horâ.*

To this mixture sometimes were added two grains of the *antimonium tartarifatum*, or what was called *tartar emetic*.

* *Translation of the Prescription.*

No. 5. Take of Camphor 1 dram, which dissolve in a table spoonful of rectified spirit of wine.

Mucilage of gum arabic 3 quarters of an ounce.

Pure water, nearly 1 pint, mix them, of which take three table spoonfuls every four hours.

In case of purging, the antiseptic laxative was occasionally repeated, to remove what irritated the intestines, and the following mixture given:

No. 6. Rx. Extract. ligni campechensis. 3ij. solve in mister. cre-
tac. 1*bij.*
Tinct. opii 3ijs. M. f. mixura.*

Brandy is occasionally added to this mixture.

But purgings, that happen in putrid fevers ought not to be *imprudently checked*; for they are often salutary, therefore the astringent mixture was seldom used.

In nausea, or vomiting, the antiseptic laxatives were given, to convey the irritating causes through the intestinal canal.

Blisters were rarely applied, except in violent coughs, difficulty of breathing, or in the pleurisy, and then they were ordered to be placed on the *scrofula cordis*, or pained side.

Phrenitis

* *Explanation of the Prescription.*

No. 6. Take of The extract of logwood 2 drams, which dissolve in one pint of chalk julep, or mixture.

Tincture of opium 1 and $\frac{1}{2}$ dram, make a mixture.

Brandy is added occasionally to this mixture.

Phrenitis putrida.

Many have, within these few years, come into the infirmary with the *phrenitis putrida*, a disorder hitherto not observed by any medical writer except myself.

The *phrenitis putrida* is a *febrile delirium*, which occasions violent mental ravings from the first moment of the attack, accompanied with a *brownish tongue*, depressed quick pulse, &c.

It is distinguishable from the common *febrile deliriums*; because these, in general, come some few days after the fever has been present; but, in the *phrenitis putrida*, the disorder commenced with delirium, and immediately shewed a brownness on the tongue.

It is distinguishable from the inflammatory *phrenitis* of the strong and plethoric, because in these, the surface of the tongue is dry and whitish in the beginning, the face is florid, the eyes staring, wild, vivid, and inflamed, and often accompanied with strong, full pulse, and other symptoms of true inflammation.

Treat-

Treatment.—A strait waistcoat was applied to secure the patients in bed, and to prevent them doing themselves, or others, mischief.

They took, first, the antiseptic laxative.

Then the camphorated mixture, with the *antimonium tartarifatum*, was commonly given during the night, when there was a considerable exacerbation of the symptoms.

They were sometimes blistered.

The bark and acid mixture was commonly given from the beginning, if no circumstance forbade its use; and many afflicted with this *putrid phrensy*, by very little else than the antiseptic mixture, in two, or three weeks, more or less, were perfectly recovered.

The *phrenitis nervosa*, or nervous, febrile phrensy, under which a great personage formerly labored, with the white, moist tongue, low fever, &c. has been cured at the infirmary, by the same methods, and likewise the nervous fever.

Small-Pox.

The confluent small-pox has been constantly treated in a similar manner, when *purple petechiae, spots, or a brownish tongue,* I appeared.

appeared. The practice has been constantly attended with extraordinary success, even amongst pregnant women; and I am convinced, that very few would die of the *confluent small-pox*, if the antiseptic plans already mentioned were always applied in the commencement of the disease.*

The cases alluded to, so successfully treated in the *St. Mary-le-Bone Infirmary*, were the *natural small-pox*, with *purple spots, brown tongue, &c.* but I am of opinion, that all ill success would be infallibly prevented in inoculation, by the use of the vitriolic acids.

These indisputable facts and methods of treatment have been communicated to induce practitioners in medicine to depart from destructive prejudices.

After comparing the *fatality* of the *common* methods of treatment with the present success; after it has been ascertained, that from *sixty* to *eighty* die out of every hundred by

* Many years ago a fire happened at *Blandford*, in *Dorsetshire*, which consumed the town; amongst the sufferers, were above thirty persons, afflicted with the *small-pox*; they were accommodated with cots or hammocks, or by other means, under the bridge, lying openly exposed in a stream of cold air, and they all recovered. This history I had from my friend John Tucker, Esq. Member for *Weymouth*, formerly; a striking proof of the utility of a continual fresh stream of air in malignant infectious diseases.

the common erroneous treatment, as practised by almost all the physicians in Europe; and that above *ninety*, out of every hundred, recover in the worst species of the putrid fever, when treated in the beginning by the bark, acids, &c. and by avoiding all *saline remedies*: it is presumed, no person will be so criminally obstinate, as to continue methods that prove destructive to the human species, in contradiction to those modes that may annually *save thousands*.

I should not appear thus strenuous, were not the subject very important, and were I not convinced, that it is difficult, very difficult, to remove medical prejudices. These sentiments will be considered an attack on hundreds of medical practitioners; for some will take personally, what is intended generally and professionally. There is nothing to apprehend, if they persevere in error, but the injury done to society; for the facts are irrefutable, and the new methods cannot be too soon universally received; nor the erroneous old doctrines, commonly practised, too soon exploded and buried in eternal oblivion.

It may be necessary, previous to quitting the subject of putrid-tending, infectious dis-

eaſes, &c. to produce a list of medicines preſcribed by the moſt approved writers in me-dicine. The remedies here exhibited, are, in many instances, uſeless, absurd, injurious, or abſolutely contrary to the intentions of cure.

From *Sydenham's Epidemics of
1661, 1662, 1663, 1664.*

Symptoms.—Great faintness, vomiting, dry and *black tongue*, great and ſudden loſs of strength, a dryneſs of the external parts, &c.

Bleeding not to be omitted without dan-ger, in young people.

An emetic in the morning.

An opiate in the evening.

Cordials.

Waters of borage, citron, black cherries, compound ſcordium water, barley cinnamon water.

Prepared pearl.

Gascoign's powder.

Lapis contrayerva.

Leaf gold.

Treacle water.

Seeds of citron.

Syrup of cloves, &c.

T 2

And

And an abundance of such insignificant trifling practice.

For poor Persons.

Bleeding.

Vomiting.

Water, or barley gruel.

Warm small beer.

The application of the heat of a strong, healthy young man.—Was there ever any thing conceived more absurd?

Distilled waters of purslain and wild poppies, and syrup of white poppies, syrup of cowslips.

*In the inverted Motion of the Intestines, or
Iliac Passion.*

Salt of wormwood and lemon juice, mint water.

A live puppy to be applied to the belly.

In the Plague or pestilential Fever.

Bleeding plentifully.

Dissipating the pestilential ferment by sweat.

Venice treacle.

Gascoign's powder.

Cochineal.

Saffron.

Juice

Juice of Kermes.

Distilled water of *carduus benedictus*.

Scordium.

Treacle water, and syrup of cloves.

Sweating.

Sydenham appears to have been more a *spectator* than a *curer* of these disorders: the chemists of his time were much greater practical physicians; but it has been the fashion to praise this author, and all his absurdities, even to this present moment, though the most uninformed apothecary would be ashamed to follow his prescriptions in many disorders of which he treats.

Febrilis ardens, &c. from *Boerhaave*.

Demulcent aqueous drinks.

Bleeding.

Diluting clysters, cooling, &c.

Medicamenta aquosa, blanda, *nitrofa*, &c.

Boerhaave attempted to harmonize and unite all the sects of medicine: he wrote before he had seen much practice, and, therefore, he has tacked together the galenical, chemical, the pretended *sectatores naturæ*, the mathematical, the geometrical calculators, the mechanical, the humoral Lewenhœckian,

kian, and whatever he found plausible. The aphorisms are an astonishing production of collected doubtful systems in one *focus*, and manifest superlative ingenuity: but what is most astonishing, and to be lamented, they fascinated all the medical profession for half a century, and even to this present time: a proof how few think for themselves.

From *Hoffman*.

Emetics.

Alexipharmics.

Bezoardics.

Bleeding.

Blisters.

Elder flower water.

Waters of limes.

— Scordium.

— Scabious.

— Carduus benedictus.

Juice of roses.

Powders of diaphoretic antimony.

— of mother of pearl.

— Crabs eyes.

— Amber.

— Terra sigillata.

— Burnt hartshorn.

Pure nitre.

Essence and extract of Scordium.

Vincetoxicum.

Dulcified spirit of nitre.

Decoction of scorzonera.

Shavings and jellies of hartshorn.

Orange flower water.

French oil of citrons, with sugar.

Confection of alkermes.

Balsam of life,

Essence of castor.

Cinnabar.

Succinated spirit of hartshorn.

Bezoardic powder, nitre and camphor.

Outwardly to the stomach, venice treacle, camphor, with spirits of wine, and sal ammoniac.

Oil of rue and lavender.

Hoffman was the most learned and best reasoner of his time ; but his practice was often puerile, and tinctured with a vicious credulity on the supposed efficacy of energetic médecine.

From *Huxham*.

Bleeding.

Vomits.

To allay Vomiting.

Venice treacle in salt of wormwood mixture.

Juice of lemons, mint water.

Clysters of milk sugar and salt.

Laxatives of manna.

————— **Sal Polychrest.**

————— **Glauber's salts.**

Diarrhœa or Dysentery to be restrained by

Theriaca Andromachi.

Astringent alexipharmics.

Confect. Fracastorii.

Blisters, in the decline.

*From Sir John Pringle, late Physician to his
Present Majesty.*

**Vomits, then a bolus of theriaca, with salt
of hartshorn.**

Bleeding.

Contrayerva powder and nitre.

Spiritus Mindererii.

Spirituous waters and salt of hartshorn.

In Recovery.

Pil. Matthæi.

10 grains of asafætida bis de die.

From Lieutaud.

Recommends antimonials, and observes,
Sydenham said, " that malignity, when ap-
plied

plied to diseases, had slaughtered more than gunpowder. I am concerned to say, that more have been slaughtered by *erroneous medical practices*, than by the sword.

From Monro.

Rhubarb or salts.

Emetic in the evening, a purge the next day.

Saline draughts, with the pulvis contrayerva.*

Afterwards cordials are united to the saline.

This author, however, judiciously recommends a free use of the bark.

If Fox's formula, collected for above thirty years from the practice of the most esteemed London physicians of the court, or otherwise, be examined, there will appear a very inefficacious practice in fevers.

Strange mixtures of contrayerva.

Bezoar,

Castor.

Theriaca.

Syrup of saffron.

Vomits.

Nitre.

Cordial confection.

* Gascoign's powder and compound contrayerva powder, bezoar, &c. &c. are all inefficacious remedies, except for acids in the stomach.

Valerian.

Afafœtida.

Sal succini.

Rhubarb, James's powder, and afafœtida.

Tartarum vitriolatum and pulv. e chel.

cancror. comp.

Flowers of chamomile and rose water, and a number of elaborate prescriptions, often futile, and, in many instances, contrary to the rules of chemical union : but, as the authors are no more, may their prescriptions be buried in peace ! They followed the prejudices of the day, and in putrid fevers must have frequently done much mischief.

Mead, in Cure of the Plague.

Light emetics.

Bleedings.

Sweating, &c.

Storck.

In general, this author well understands the use of the *cortex* in petechial fevers.

De Haen.

Neutral salts, as

Sal nitre.

— *prunella.*

— *polychrest.*

Home.

Bleeding.

Vomiting.

Diaphoretics.

<i>Gregory.</i>	<i>Cullen.</i>
Antiphlogistic regimen.	Diluents.
Emetics.	Neutral salts.
Diaphoretics.	Sudorifics.
	Emetics.

Such have been the erroneous practices of physicians, who are quoted as the highest authority, for the direction of all practitioners in medicine.

Though there are in the antecedent list of remedies, many that certainly are improper in the cure of putrid, contagious, or malignant and petechial fevers ; yet in the authors cited, several *useful observations* and *rules* may be extracted, which, however, require no small share of medical sagacity to select from the dangerous, or useless.

Some of the remedies are ridiculous, others, in certain cases, may not be very exceptionable, but the incongruity of repeatedly bleeding, sweating, or giving cooling salts, &c. in hospital infectious petechial fevers that generally require the *immediate* use and continuance of the bark, after the intestines have been opened, must appear obvious. The success,

success, however, attending the fortunate plan of treatment here delivered, is the greatest argument in its favor, and on that alone it is offered, as worthy of the attention of physicians and the public in general. It must be observed, that numberless practitioners through want of information, or other causes, continue *bleeding*, *sweating*, *purging*, and *cooling*, or giving some one or other of the remedies censured; not reflecting on the mischiefs arising to society, and they may stand excused, in a certain degree, because they follow the doctrines and practices of many esteemed authors. It is manifest, the best writers have been erroneous in the particulars enumerated, though excellent in the treatment of some other disorders; and though it may be very laudable to embrace their beauties; yet it is highly dangerous not to discover and avoid their fatal errors.

To the honor of the present practice of the *Vienna* physicians,* and the professors of *Edinburgh*,† the *bark* and *vitriolic acids* have been introduced in their works for the treatment of acute putrid diseases; but yet, they have

* De Haen and Storck.

† Home, Cullen, and Gregory.

have retained some of the former prejudices of Sydenham, Boerhaave, &c.

This present short essay, it is hoped, from the success of the practice, will induce physicians, to abandon *bleeding*, *violent emetics*, *purgings*, *sweating*, *cooling salts*, or *saline remedies*, *diluting drinks*, *blisters*, except in particular instances, *volatiles* and trifling *antispasmodics*, in such dangerous diseases: for most of these remedies are futile or injurious, either in the commencement, or in *any stage* of acute putrid diseases. *Fire* and *water* cannot be proper at the same time, and in the same disease: *cordials*, *antiseptics*, and *tonics* cannot rationally be used, when *cooling salts*, *relaxants* and *diluters* are prescribed. Though strikingly absurd, as such too common practices must appear to all deep reflecting physicians, yet most physicians, hitherto, have not only acquiesced in such contradictions, but have been angry when such fatal prejudices have been censured, and nothing but humanity and universal benevolence can induce any prudent man to stem the torrent of such prevailing errors. Reformation in physic, however, cannot reasonably be expected, but from

some spirited and experienced reformers, who will vigorously attack prejudices at every hazard. It is by the united labors and efforts of such enthusiastic men, men who preferred a benevolent humanity, the honor and improvement of the art, to all other temporary considerations, that medicine has received its present degree of improvement.

After fully proving, in the presence of several medical practitioners, the success of the methods of treating putrid diseases; after shewing the defective or injurious treatment *still pursued* by the majority of the profession; after solemnly declaring, that in the modes I have adopted, none, or very few *dangerous symptoms* ever appear during the course of the fever, and that all the symptoms are rendered milder by opposing the putrid-tending disposition of the fluids and laxity of the solids in the beginning of the disease: I cannot resist asserting, that all those practitioners, who still continue to follow the enumerated errors of the writers, who have hitherto appeared on the subject, must practise physic to the injury, and not for the salvation of human beings.

MEDICAL ADVICE,

FOR THE USE OF THE

ARMY AND NAVY,

IN THE

AMERICAN EXPEDITION,

OR

SERVING IN HOT CLIMATES,

WHICH WAS PRESENTED BY THE AUTHOR TO HIS
MAJESTY, IN THE YEAR 1776.



INTRODUCTION.

THE diseases common to hot climates have been written on by many sensible physicians, but their productions are more generally calculated for practitioners in medicine, than private persons. Some authors have delivered the principal parts of their works from the remarks made by others, without ever being in hot countries themselves. With these disadvantages, however, there are to be found in their writings, many sensible, judicious, and useful remarks. The following Essay contains the principal part of a much larger work on the subject, and is the result of some years practical observation on the diseases common to the West Indies and America. At all opportunities, the causes of diseases were endeavoured to be investigated, and immediately transmitted to paper; and

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from

from this collection is the following essay principally selected. In order to make it generally useful, the doctrines are delivered in the most plain manner, for the benefit of private individuals, who may not always be able to obtain medical assistance; and it is presumed that it may be of some use to young surgeons, who have never been in these countries. At first are considered the disorders that happen at sea, the methods of cure are simple, but generally prove successful; indeed this part, and likewise all the medicines recommended, are chiefly designed as a general practice, and intended for the use of those who are unacquainted with the art of physic: practitioners will attend to more minute particulars, and vary their methods according to the circumstances that may happen. With regard to the treatment of the pleurisy, peripneumony, and inflammatory fever; it must be remembered, that it is adapted to the colder European climates; as these disorders are less frequent in the warmer. The remedies prescribed in the diarrhoea may appear too gentle; in hot countries, rougher methods never succeed. It
is

is preposterous in dangerous inflammations of the intestines, to give violent irritating *vomits*, &c. the principal objection, however, is, that they seldom succeed in curing, but generally increase the distempers.

Some animadversions are made on the inconveniences that happen to the sick on board of ships; it is hoped the methods for preventing and curing sea disorders, will be found useful.

The principal causes of the diseases in hot countries are explained, the manner of prevention, and likewise a practice of cure are recommended.

All speculative reasoning is avoided, as it is of more consequence to cure, than reason on diseases. The experiments on remedies ascertaining their septic or antiseptic qualities, are of little service in the putrid diseases of hot climates, nor can they answer any purpose whatever.

If what preserves beef, or any animal flesh from putrefaction, would answer the same purposes in a fever, when the human body and its fluids are in a disposition to putrify, the reasoning from such experiments would de-

Serve our serious attention. Spirits of wine will prevent animal flesh from putrifying; but to administer spirits of wine in a putrid malignant fever, on such a principle, would be next to madness. On similar principles, however, have some practitioners recommended their favourite remedies. It unfortunately happens in some epidemic fevers, that the physician can only be a spectator of the melancholy situation of the patient; he may pity, but often cannot relieve, for want of proper remedies and conveniencies.

On the whole, this little essay is meant as a practical performance, and it will be an inexpressible satisfaction to the author, if it proves in the least serviceable to those for whom it is intended.

MEDICAL ADVICE, &c.

WHEN an army and fleet are sent out in the service of their country, to a foreign climate that may be productive of sickness, it is of the utmost importance for every individual to well understand the best methods of preserving health, for on such knowledge depends the success of a nation's arms. A great armament is now ordered to America, and the preservation of the soldiers and sailors health becomes a national object. It is the duty of every well-wisher to this country to contribute to the utmost of his power for its service ; on this principle then the present Essay is written.

The objects that are intended to be principally considered are, the manner of preventing sickness during the voyage to warmer climates ; what diseases are most predominant ;

nant; how to avoid or cure them; the manner of treating gun-shot wounds, as there is an absolute necessity of proceeding in quite a different way to the practice used in England.

On the Diseases that happen at Sea.

In the conveyance of the troops in the transports, the sea diseases are to be considered, and the observations delivered in this part, are intended for the use of the navy in general.

For the first fourteen days of the voyage there is most commonly little or no sickness, except the vomiting which the motions of the ship occasion to those who are unaccustomed to sailing; this is however of little consequence.* Soon after, and sometimes before this period, a considerable change in the diet of the seamen commences; wine or spirits are served to the ship's company instead of small beer; of wine each man is allowed a pint in the day, of rum or brandy half a pint, which

* For sea sickness, abstinence from fluids is proper; a little Magnesia may be taken; but keeping on the deck is the most effectual remedy.

which last is diluted with a considerable quantity of water, and the liquor thus united is called *Grog*. Through necessity salt provisions are the diet. Neither this diet, nor the liquor, produce diseases, unless the water should be very putrid ; but this is too common, not only in transports, but likewise in our men of war. It may be sweetened in the following manner:

After the butts are hoisted out of the hold, let the water contained in them be pumped out with a hand pump, from one vessel into another, and let this be frequently repeated for two or three days before it be put into the scuttle butts for the use of the ship's company. It is common to quench hot iron in the water, which may likewise be useful ; but above all things, agitating the water in the open air, is the most effectual means of sweetening it ; simple however as this operation is, it is generally neglected.*

The putrid water will sometimes, in hot climates, occasion fevers of the malignant kind,

* There are many improvements since I wrote this book, and Mr. Thompson, now a surgeon at Kensington, formerly of the Royal Navy, has written an excellent treatise on the Sea Scurvy, &c. Captain Cook's voyage may likewise be consulted.

kind, and fluxes ; and by the sea air, through the imprudence of the men sleeping on the deck, are pleurisies and peripneumonies produced. The first sometimes degenerate into intermittents, and the latter seldom prove fatal, if judiciously treated.

It is a common practice to keep the sick on board of a man of war in that part which is called the bay. In cold climates this situation may be proper, but in the hot countries, nothing can be more prejudicial : more men have been lost through this injudicious management, than by the violence of the most malignant diseases. It is necessary, therefore, in order to cure the sick in ships, to consider the heat or cold ; and to beg leave of the commander to admit the sick to lay in the most commodious airy place, if necessary : for a free circulation of air, above all other things, is a remedy in putrid malignant diseases ; it prevents, in a great measure, the infection spreading, and greatly assists the operation of medicines.

Pleurisy

Pleurisy and Peripneumony.

The first is an acute pain in the side, with fever and difficulty of breathing; the second a violent difficulty of breathing and inflammatory fever.

In the treatment of the pleurisy or peripneumony, which happen from the cause just mentioned, large and repeated bleedings are necessary. Internally, the following medicines are the most effectual to raise perspiration.

No. 1. Take of *James's powder* from 5 to 8 grains in a little honey or syrup, every four or six hours.

Or,

No. 2. Take of *tartar emetic* two grains, dissolve it in two table spoonfuls of water.

Take a tea spoonful, or two tea spoonfuls in a little water, every four or six hours.

In order to open the bowels.

No. 3. Take half an ounce or more of *Glauber's salt*, and an equal quantity of *manna*, dissolved in a quarter of a pint of water.

No. 4. Dissolve a quarter of an ounce of powdered sal nitre in a quart of water. This may be sweetened with honey, treacle, or sugar, and drank freely as a common drink.

If

If the difficulty of breathing or pain continues, bleeding must be repeated, and a *blister* must be applied in the pleurisy to the side, but in the peripneumony or inflammation of the lungs to the pit of the stomach, and must be kept discharging through the whole cure.

In two or three days the spitting is to be promoted by

No. 5. Take of nitre a quarter of an ounce, dissolve it in one pint of water: to which add two tea spoonfuls of vinegar of squills and some honey or sugar. Take two or three table spoonfuls frequently.

This practice in general will be found successful, both with the soldiers and sailors. If, however, some cases should occur, that do not yield either to repeated bleedings, or to the remedies already recommended, then a large blister must be applied to the shoulders, and kept discharging; and even then the former medicines will be most convenient on ship-board, or indeed on shore, in the service; where a practitioner should always endeavour to confine his practice, and make it as effectual as possible, in removing the disorder, with the fewest and most efficacious remedies,

dies, otherwise he will often labour under very great inconveniences.

Acute Inflammatory Fever,

Begins with cold shiverings, succeeded by great heat, thirst, nausea, quick full pulse, pain in the head, back, and loins, &c. It commonly arises from sudden cold, the drinking cold liquors when over-heated, or when in a state of perspiration. It attacks the young, strong and vigorous; very seldom the debilitated.

In the acute inflammatory fever, which may happen from the same cause, repeated bleedings are necessary; if a nausea or vomitings should be distressing, then about three grains of tartar emetic, mixed with a little water and magnesia, may be given after the bleeding; if this, after discharging whatever is on the stomach, should not operate on the intestines, and produce an evacuation downwards, then half a grain of tartar emetic, with a little magnesia, and about one scruple of nitre, may be mixed in two ounces of common water, and be given every hour till it operates.

For quenching the thirst, no drink will be equal to about a tea-cup full of vinegar mixed with a quart of water: it may be drank as often as the patient desires it. This, however, should not be given till the other remedies have operated downwards.

Two drachms of nitre may be added to each quart of vinegar drink, if the heat should be intense: it must be observed, that nitre is improper in most cases in hot climates, but inflammatory disorders are not there so frequent as in the colder countries.

In all other respects, the true inflammatory fever may be treated exactly as the pleurisy and peripneumony.

If the fever should continue, and a delirium come on, about the sixth or seventh day, then blistering each leg and the back becomes necessary.

Internally, the camphire julep, and nitre dissolved, will be most proper.

In the recovery, a light laxative will be necessary, a little of the common purging salts dissolved, will be as proper as any thing, or ten grains of powdered jalap, may be mixed

mixed with about fifteen grains of nitre or tremor tartar, and taken in some water.

Twenty-five drops of the acid elixir of vitriol in a cup of water, may be taken three times in the day, when the patient begins to recover.

The diet in the beginning, and during the augmentation of the fever, should be very low; after its termination, a greater freedom is necessary; but with regard to diet, the situation on board of a ship, or in the army, obliges men to use, in the best manner, whatever can be procured.

In the navy, the surgeons are supplied with portable soup, rice, currants, barley, &c. but this kind of diet sailors and soldiers in general seem averse to, and though they receive them, they frequently are thrown immediately overboard. In the West Indies, and southern parts of America, those stores are soon spoiled, and unfit for use, though they prove a considerable expence to government.

Coughs.

Coughs.

A violent cough sometimes attacks the people in changing from one climate to another, as from the West-Indies to the coldest part of North America, or to England. In the treating such a complaint, *bleeding* is proper, and the *cooling* remedies. If the irritation and coughing are very violent, to a mixture composed of two tea-spoonfuls of vinegar of squills, water, and sugar, a few drops of liquid laudanum, and nitre must be added, to every twenty drops at least half a drachm. An oleous mixture, made in the following manner, is an excellent remedy; but it cannot be easily procured, as oil is apt to turn rancid in a hot country.

No. 6. Take of Oil of almonds, or best olive oil, five table spoonfuls.

Soft water, a quartern and half quarter of a pint.

Salt of tartar or wormwood, forty grains.

Shake them together.

To this may be added 30 or 40 drops of laudanum, or what is now called tincture of opium, and a little white sugar.

Take two or three table spoonfuls three or four times a day.

Or the prescription, No. 5. is proper for a cough, when expectoration or spitting should be promoted, and a little laudanum must be added.

It may be remarked that coughs, nay even the last stages of consumptions, are curable, by removing from the cold or northern countries, to the south of America, or the West Indies, without any medical assistance whatever.

In all inflammatory distempers, the intestines should be kept in a laxative state, by gentle purges of salts, or clysters.

Bleeding.

In the treatment of inflammatory distempers, great attention must be paid to the season of the year and climate; for, in proportion as the country or season is hot or cold, so must bleeding be regulated. In colder countries, large bleedings are not only salutary, but absolutely necessary; in hot climates bleeding must not be repeated; it must be frequently omitted, as it exhausts the strength of the patient. The inflammatory symptoms in most diseases, by profuse bleedings, are immediately succeeded by a putrefactive state of the juices, which will end in the death of the patient.

This

This happened last war to the people belonging to M. Lally, in the East-Indies; for the French physicians and surgeons using the lancet with the same freedom they had been accustomed to in France, slaughtered several thousands of their fellow subjects who were attacked with malignant fevers, before they discovered their fatal errors. So that if bleeding be used liberally, without reflecting on the season of the year, climate, and other circumstances, it will be productive of irreparable injuries.

On the Diarrhoea and Dysentery.

The diarrhoea is a violent and continued purging, with gripings, &c. the dysentery is a violent purging, in which blood and mucus are voided with griping pains, and an inclination to go to stool without evacuation, except of a little blood and mucus.

The diarrhoea and dysentery frequently happen on board of ships during a voyage to a warm climate, and the putrefactive state of the water has no inconsiderable share in producing them. To prevent these complaints,

sweeten-

sweetening the water by agitating it in the open air is of great consequence. Sometimes, however, it arises from some predisposing causes in the air, which is rendered noxious from a great number of people eating, drinking, and sleeping in a confined place, as between the decks. For this reason, nothing can contribute more to the health of the soldiery or seamen than being on the deck as much as possible. In very hot climates, as in South-America and the West-Indies, it is better to sleep under an awning, on the deck, under the fore-castle, or half-deck, than below. When a diarrhoea arises from any noxious particles in the air, it is more dangerous and difficult of cure than that which arises from the putrid state of the water; but both will be proportionably dangerous according to the heat of the climate. Fruits are often productive of these diseases. In cold countries a diarrhoea is frequently useful, when it does not continue; but, in hot countries, it sometimes proves fatal, or degenerates into a dysentery, with which the patient languishes for a considerable time, and at last

is relieved from his misery, if not judiciously treated, by death.

It is a common practice in the diarrhoea, let it arise from whatever cause, to first order a vomit, either of the *tartar emetic* or *ipecacuanha*, and, after the operation, to give an opiate; then, if the disease continue, the ipecacuanha, in small doses, is given, and vomits are frequently repeated; the *vitrum antimonii ceratum* is likewise administered. These are common practices, but do not prove successful even in Europe. They are much too violent and dangerous in hot climates, especially in the summer months; for to give vomits when the intestines are already in a state of irritation, is adding *fuel to fire*, and cannot answer any curative intention whatever.

The best method of treating the purging, is, to give gentle laxatives in small doses, composed of senna tea, a little manna, sal *Gluberi*, or oil, united with water, either with a mucilage of gum arabic, or the yolk of an egg, or the salt of tartar, at the distance of about two hours between each dose. By this means the stomach and intestinal canal will

be

be cleansed ; then may be given the chalk drink, in which may be dissolved a little gum arabic. If violent gripings should accompany the disease, which are very common, then a little of the confect. opata may be taken in the dose of half a drachm, every night, but not before the causes of the griping be removed. If the pains should not be very violent, and the diarrhoea should in some measure abate by the first medicines, it is best to proceed cautiously, and depend on the chalk drink, with a dose or two of the *magnesia*, joined with grated ginger, and powdered rhubarb, occasionally, which will often succeed. If the disorder should not resist these remedies, and a tenesmus proves troublesome, from relaxation only, then, to the opiate confection may be added some of the pulv. terr. Japon. sang. dracon. the pulv. e tragacanth. comp. a decoction of cort. Peruv. and such like medicines, taking care to avoid the use of any powerful astringents, while the gripings remain violent.

On the Dysentery, or Bloody Flux.

It frequently happens that a long-continued diarrhoea degenerates into a dysentery, and it is likewise no uncommon thing for a patient to be seized with this complaint in hot countries. It is a common practice in this disorder to bleed repeatedly; but this would be dangerous, and has proved fatal in hot climates. In the cold seasons of the year, and in colder countries, such a method has its advantages. The dysentery is most commonly attended with a tenesmus, and not unfrequently proves fatal, especially if violent emetics are repeated. In this disorder, in which the villous coat of the intestines is abraded in several places, it is best to proceed with gentleness. At first the laxatives may be given, or the magnesia, &c. two or three times, then it will be proper to give the pulv. e tragacanth. comp. in the dose of two scruples or more, every two or three hours, with the chalk drink, and in all other respects to proceed in the cure, in a similar manner to that directed in the diarrhoea.

After proper evacuations, two drachms of extract of logwood may be dissolved in half a pint of ginger tea, to which may be added two drachms of the sweet elixir of vitriol and one drachm of the *confectio opata*. Three table spoonfuls may be taken three or four times in the day. Spirits may occasionally be added to this mixture.

If a foul air should have been the cause of the foregoing diseases, the patients should be removed; if from bad water or fruits, these things, if possible, should be remedied.

Scurvy.

As for the scurvy, it is chiefly owing to salt provisions; it has been found that vegetables and a fresh diet are the most effectual remedies. It frequently occasions large eruptions, relaxations of the whole habit; œdematos swellings of the legs; and, in some instances, deprives the patient of the use of his arms or legs, occasioning contractions of the parts.*

In this disorder, when the sick are on ship-board, no remedy is better than about twenty grains

* See Mr. Thompson's Treatise on this disease.

grains of tremor tartar, and the same quantity of flowers of sulphur, night and morning; they should avoid as much as possible all salt meats, and live principally on pease, burgoo, rice, and such like diet. It however frequently happens that seamen will not comply with any restrictions on their diet without murmuring, and the oatmeal and water, which is boiled to a thick consistence, is seldom eat, being more commonly used as a substitute for soap to wash their linen. Extract of malt is used in the navy, and is an excellent preservative against putrid diseases in hot countries, and likewise the scury.

*Some general Remarks on the Cleanliness of
Ships, the proper Place for the Sick, &c.*

Some objections have been already mentioned concerning the place appointed for the sick on ship-board, and in putrid malignant diseases there is no chance of saving their lives, unless some alteration is adopted. The place called the bay, can only be compared to a cellar, where there is little or no circulation of pure air; a number of sick lay close together,

ther, amidst the stench arising from the diseases, and the putrid exhalations of the patients evacuations. It is generally dark, and its cleanliness, in many ships, seldom inspected into ; though this, and a fresh air, above all other things, is necessary for the recovery of patients in the generality of fevers, and many other disorders.

In cold countries, or in the European climate, this inconvenience is not so immediately felt as in hot countries. In the first, the disorders that happen are slow in their effects ; in the summer months, in the West-Indies and America, the fevers, fluxes, and other complaints, destroy patients in a few days, and most commonly terminate by a putrid state of the whole habit. Whatever is done by medicine, must be effected immediately, or the patient dies. It, therefore, becomes a principal object with those who have the care of the sick, to unite all the means that art can suggest to save the patient's life ; amongst these, no one is so necessary as a *good air*. But this cannot be procured as things are now ordered ; and thus many brave soldiers and sailors become the devoted

devoted victims to *bad management, inattention, or obstinate perseverance in old customs.** To remedy this evil, a concurrence of the captain and superior officers of a ship is necessary ; which sometimes, however necessary, is not attainable, owing to an obstinate tenacity to old customs, especially amongst those who, in my time, were called *ninety-tweers*, or those who talked of the naval fights of 1692. Under the half-deck, the working of a ship is an objection ; under the forecastle is the galley-fire ; therefore these places are improper. In frigates, the main hatchway births, where the ballast ports are fixed, would be the most eligible situation for the sick in infectious complaints ; or under the booms, between the fore and main hatchway, in the place vulgarly called *no man's land*. In large ships, any part where the ports are open on both sides, would be much better than the *bay*. There can be little or no objection to this alteration, so essentially necessary for saving the lives of the sickly

* I am informed that the navy, in many respects, is on a much better footing than formerly. I speak of what I observed from the years 1760 until 1764.

sickly seamen; except that it deprives the armourer, and some few petit officers of the births they are accustomed to on board of frigates: in larger ships, I can see no reason, whatever for not complying with this useful plan, unless there should be a greater number of men sick, than the places could contain.

It sometimes happens, that a putrid fever, of the most malignant kind, shall arise from, the smell of the *bilge water*, that lies at the bottom of the ship; it is rendered very fetid, from the soft loom and muddy parts of the ballast; and the filthy thing thrown down by the ship's company. Going into the hold, will commonly change *bright silver* to a *black color*. In the pumping up this putrid water, in order to discharge it from the ship, in hot countries, the men who work at the pump, are taken sometimes with a giddiness, fall down on the deck, are seized with a vomiting, pain in the head, and violent fever; which proves fatal in a few days. This happened at the *Havanna*. I have known this disorder to become infectious in the West-India and American harbours; and those

those who attended such patients, have been seized with the disorder, and most frequently lost their lives. With proper medical assistance many may be saved; but medical skill, in these cases, unless assisted by a *free circulation of air*, will avail nothing.

To prevent, as much as possible, these baneful effects, fresh water should be suffered to flow into the well of the ship *twice* in the day, in hot climates, and be pumped out. When the ship is hove down, washing the ballast, cleansing the limbers, and well washing the hold, will be extremely useful, for preserving the health of a ship's company.

The beds, cloathing, &c. of all the ship's company should every day be carried on deck to sweeten, and the linen, &c. they wear, should be washed and changed as often as possible. All the cloaths about the sick and dead should be removed and thoroughly cleansed.

*On the Diseases of America, its Climate, &c.
but which is applicable to all hot Countries.*

Before the particular diseases common to America are treated of, it will be of some confe-

consequence to give a general idea of the change of the seasons, the air, and climate.

From the sea side, for a great number of miles up the country, the land is rather low in most places; it then gradually rises, and terminates in lofty mountains towards the west. These mountains form a chain, as it were, and run from the southern provinces all throughout the continent of North America. From the east side of these, many large rivers arise, and, running in winding courses, discharge themselves into the ocean: they receive all the waters of the adjacent lands, which are frequently overflowed for many miles, owing to dissolved snow, or the falling of heavy rains in the interior parts of the country. The rains happen both in spring and autumn, but most frequently in the latter season. The inundations destroy several reptiles and insects, which, with the putrefaction of vegetables, and leaves of trees, infect the air, and produce many diseases.

Weather.

In the winter, in the northern provinces of America, the weather is extremely cold; there

there are likewise large falls of snow. In the southern provinces the frosts seldom remain long. In both North and South America the summer months are exceedingly hot; the heat in the southern provinces is equal to that in the West-Indies. In Virginia, North and South Carolina, and Georgia, during summer, the mercury has been known to rise to the 130th division of the thermometer. Metals at this time are very *hot*, and cannot be easily handled: *water* is so scarce, from this excessive heat, that many beasts, and sometimes men, perish through want of that necessary article of life.

After these heats, whirlwinds sometimes happen, that carry away trees, sink ships in the harbours, and do an incredible deal of mischief. The heat of the summer continues about four months.

The power of the sun is so great, when the season is dry, in the southern provinces, that the earth becomes parched; no seed that is sown will grow; but so fertile is the country, that, with one crop out of three, the planters are abundantly satisfied. The country abounds with woods, not one twentieth part,

at

at a moderate computation, being cleared in 1763.

The dews are very heavy, and shew an atmosphere replete with moisture; those who are obliged to be in the open air at night, are damped, chilled, and a general lassitude is quickly perceived. The dews being penetrating, no apparel is proof against them; for they presently pass to the skin, conveying a damp, injurious cool air. The same may be said of the fogs that sometimes obscure the sun for several days together: whence, if no other bad effects follow, a torpor both of the mind and body will be induced.

In this dark season, water will be seen pouring down looking-glasses, candles burn dimly, sinks and standing waters emit an offensive vapor, all things are wet in houses that have no fires. This is the common weather in the latter part of autumn and winter, in the southern provinces, except when it be frosty; and the same is observed in the northern, though in a less degree.

The fogs generally are dissipated before twelve o'clock in the forenoon by the wind, or exhaled by the sun.

During

During the hot hot weather, the people in the country enjoy better health than those in town; but they are more sickly in autumn.

Thunder and lightning happen at all seasons, and from April to September a shower of rain is seldom seen without both; but they are more dreadful in *June, July, and August*, for, during that period, scarce a night passes without lightning; indeed, the air seems at times to be all in a flame. The thunder gusts are sometimes very violent after heat, in which are incessant flashes of lightning, by which it happens that some people are killed every year.

Winds.

When a south wind blows from the warmer latitudes, it is always hot and moist. A south-west wind is sultry and moist in summer; as it passes over large spaces of heated, marshy, overflowed, or wood lands, and in the winter it brings damps or rain. The winds that blow from the north-west, are cooling and refreshing in summer, but bleak and

and chilling in winter: at all seasons, they dispel clouds and fogs. With a north-east wind there is seldom a clear sky. The wind, which commonly springs up from the south-east, about ten o'clock in the forenoon, is called the *Sea Breeze*; it continues till towards seven in the evening. About eight or nine, a small westerly wind arises, and continues till the same hour the next morning. These alternately succeed each other, in the summer, and are very refreshing.

Water.

Near the sea coasts, if wells be sunk deeper than eleven or twelve feet, their bottoms being then on an equality with the surface of the low tide, the water has a saltish taste, from the sea transfusing through the earth. If this water be drank with food, it proves purgative. In the country, however, there are good springs, and likewise wholesome water in the rivers, when it be suffered to deposit its earthly particles before it be used.

In the spring and autumn, the *anasarca*, *ascites*, and *aedematous tumors* in general of the

the dropsical kind, and intermitting fevers, are most predominant.

In the summer, fevers, diarrhœa, dysentery, apoplexies; and in the latter part, especially if the season be rainy, putrid and low nervous fevers.

In winter, sore throats, peripneumony, pleurisy, and sometimes coughs happen. These are the disorders that are common to the natives. Though in several parts of North America, the inhabitants are very healthful: in the southern, at particular seasons, much sickness prevails. The prevention of diseases, in the different seasons, shall be next considered.

*Rules for the Preservation of Health in America,
and Hot Climates.*

There is a considerable difference between giving advice to a large fleet and army, composed of several thousands of men, and a few individuals, or a company or two of soldiers. Many disorders will inevitably rage amongst the first, that will never happen with the latter.

To

To the natives, likewise, a country may seldom produce diseases; but to strangers, the most fatal effects may ensue: to prove which, innumerable instances might be produced. It is impossible to foresee what may exactly happen to such a numerous body of men as are engaged in the present expedition; therefore general rules are here intended; the particular management of several incidents must depend on the good sense and discretion of the individuals immediately interested.

In the Summer,

Avoid drinking cold water after being heated by a march, or any hard exercise, for it has proved fatal: but as drink is absolutely necessary in a country in which people perspire exceedingly, the water should be mixed with about one eighth of *rum*. This is one of the most simple and best drinks in the country. To those who are relaxed, nothing can be better than an addition to this drink of about twelve drops of the *acid elixir of violet*, three or four times in the day.

All excesses of every kind should be avoided as much as possible, and drunkenness in particular.

No person should sleep at night in the open air, as it is extremely hazardous, on account of the damps. When the men sleep, they should have a sort of long light linen trowsers, to prevent injuries from *musquetoes*, *horse flies*, and other insects, as they sometimes produce inflammations and ulcers in the legs, and even mortifications: the officers may guard against these evils, by having gauze curtains to their beds.

The best remedy for the inflammation arising from these causes, is the juice of a lime, sharp vinegar, the vegeto-mineral water, or spirits of hartshorn and water.

There should be a general rule with regard to water; never drink that which proves laxative.

The men should be very moderate in eating the *summer fruits*, as they are productive of diarrhoeas, dysenteries, and other disorders, which have suddenly diminished the numbers of great armies.

Above

Above all things, where there is a large army, cleanliness, not only in dress, but in all other respects, should be strongly inculcated, and even insisted on; for nothing will be more likely to produce the most dangerous *epidemic diseases*, than the *stench* arising from the natural evacuations, the useless parts of vegetables, the remains of the meat, &c. and though there may be great difficulty in regulating these matters, yet they are so important, that on no consideration should they be neglected.

In the Autumn.

Many inconveniences will most probably arise in this season. The air, which circulates through the country, is tainted more or less with putridity, arising from the *heavy rains*, and the *putrefaction of vegetables*, &c. this will be still more noxious in proportion as the season is hot, or to those who are in the southern provinces. All the precautions before mentioned, are more particularly to be attended to at this time. A larger quantity of rum may be drank with the water, and the elixir

of vitriol will be very useful. The evening and morning damps, and all excesses, should be avoided as much as possible: at this season Madeira wine, and other liquors, may be used more freely than at any other part of the year.—Particular care should be taken to keep the head warm of a night with a thick milled cap.

Winter.

In the winter disorders are less frequent, and in the northern parts, the principal thing is to guard against the cold, which is intense; in the southern, the damps, as well as cold, are to be attended to. In short, the rules observed in England will hold good in this season.

Spring.

In the spring fewer disorders happen than in autumn; however, the same rules ought to be observed.

This is the general account of the weather, and the methods of preventing sickness in the different seasons; but the weather varies, as in most other countries, every year.

In

In some years disorders are very prevalent ; in others they are less frequent. The next thing to be considered is, the general methods of cure for the complaints that most commonly happen.

On the Intermittent Fever.

There are no disorders during a damp autumn in America, more frequent than fevers of the intermittent kind. The patient is first seized with a cold shivering, this is succeeded by heat, an uneasiness, languor of the whole body, and great thirst ; sometimes it is attended with a violent head-ach, at others not. It is similar to the common intermittents of other countries, except that it produces greater lassitude, the symptoms are more violent, and sooner bring on an universal relaxation of the whole body.

It is a common practice in these diseases to give, at first, emetics and sudorifics ; afterwards a laxative, then the bark : in the colder climates, these remedies commonly cure the disorder. These methods will likewise succeed in the northern parts of America in the winter, but in the spring and autumn ; when

these

these complaints are most predominant, in proportion as the climate is hot, so must the practice be gentle. Emetics are too violent, as likewise any rough remedies whatever.

In the beginning of the disorder, it will be best to give a gentle laxative, the *tinctura senæ*, in the dose of about two or three drachms; or half an ounce mixed with about three table spoonfuls of water, will be proper: *cremor tartar*, or any other gentle laxative, may be likewise used. When this has operated downwards, during the fit, hot vinegar drink will be an excellent remedy, if it does not disagree with the stomach. When the fever is off, the bark given in the following manner, will generally cure the disorder,

Bark Mixture.

Take of powdered bark one ounce, put it into a quart bottle, add to it two ounces of any proof spirit, and fill the bottle nearly with the decoction of bark; then put to this mixture two or three drachms of the acid elixir of vitriol. About four table spoonfuls of this should be taken every two hours while the fever is off. When the cold shivering

vering and fever again return, then the vinegar drink is to be administered.

These two remedies are to be alternately given till the disorder be cured, which will be greatly facilitated by the advantage of a free good air.

In case of costiveness, it will be proper to give some gentle laxative during the administration of the above remedies.

If the bark prove ineffectual, the obstructed viscera must be attended to; for this purpose a grain or two of calomel should be taken with any bitter purging pill, every other day.

On the Putrid Nervous Fever.

In rainy damp seasons, putrid and nervous fevers appear, in which the eyes soon lose their brightness; the tongue falters, trembles; is either *brown*, parched, and dry, or slimy and pale. A great restlessness, watchings, and tremblings, accompany this disorder. The sick toss themselves about seemingly with anxiety, and mutter words in an incoherent manner: others start suddenly when they are spoken to, or touched; and after

after staring wildly about the room, fall in a few minutes into a kind of slumber.

Vomitings, purgings, profuse sweats, and a general lassitude of body, with purple petechia, attend these fevers.

In this fever no emetics, or violent medicines whatever, should be given, for they irritate, render the symptoms more violent, and may prove destructive to the patient.

The best method of allaying the irritation in the stomach, will be by giving *gentle* laxatives, or repeated clysters. Whatever is given, should be small in quantity, not above a table spoonful at a dose, and this should be repeated about every half hour or hour till it operates. A decoction of tamarinds and senna, with the addition of a little of the tinct. of senna is proper, or cremor tartar one drachm, rhubarb powdered 15 grains, and a little ginger. If these should operate downwards, when the vomiting ceases, a drink composed of two tea spoonfuls of acid elixir of vitriol, a quart of water, and a little sugar, should be given, which indeed, while the fever remains, is the best medicine.

The

The mouth and tongue should be kept quite clean in this disorder, either by a solution of borax, vinegar and water, or a gargle composed of spirit of vitriol and water.

If the fever does not terminate in death, by a putrefactive state of the juices, which is no uncommon thing, especially if the patient lies in an impure air, it generally becomes an intermittent. This circumstance should be particularly attended to; and the bark should be given, in the first instance of an intermission, with spirit.

Of the Putrid Bilious Fever.

This terrible distemper is not so frequent in *North America*, as in the *Southern provinces*; nor in the latter, as in the *West Indies*; but it appears sometimes, when the weather is very warm and rainy, during the months of August, September, and October.

This disorder differs very little from the yellow pestilential fever of the West Indies. It begins with a vomiting of bile, and sometimes a diarrhoea, a great heat, thirst, an uneasiness of the whole body, and the spirits

are

are exceedingly depressed. Sometimes the vomiting continues during the first three or four days, and no remedy whatever will allay it. About the third, fourth, or fifth day, sooner or later, as the patient is proportionably robust or weakly, the evacuations have a cadaverous scent; the eyes appear yellow; the tongue is of a colour nearly approaching to black. From the first attack, a general weakness is perceived, an anxiety of mind, and even mongst men otherwise remarkably courageous, are depressed. Some have an opinion, from the first beginning of the disease, that they shall die, and they frequently do. Putrid, blood in the latter stages of the disorder appears about the gums, tongue, teeth, and inside of the cheek, that smells very offensive. It issues from, and appears hanging about the internal part of the nostrils. In this state of the disease, little pain is felt; the patient sometimes appears very serene and sensible, and dies. Some authors say, that the putrid blood issues through the pores of the skin—I never saw an instance of this sort, though I have attended great numbers of people in this fever.

This

This dreadful fever may happen in harbours during the hot seasons, where the ships are surrounded with high mountains or woods, as in some of the West-India islands; Norfolk river in Virginia, and other places in America; or from the putrid vapours that may arise from a great number of people in a close place; and above all, from a disregard of the strictest cleanliness in a camp.

This distemper is epidemic, and rages like the plague: so dangerous is it, that very few who attend the sick escape with their lives; therefore it will be of some use to know the best methods of avoiding this fever, and preventing its fatal ravages.

Whenever such disorder happens on board ships in any harbour, the sick should be immediately removed on board some ship where a purer air is circulating.

If it happens in a camp, the cause should be investigated, and, if possible, removed. If the place be unhealthy, either from being surrounded by woodlands, high mountains, or from the putrid exhalations of lakes, or standing waters, a more eligible situation should be adopted. If it happen in an hospital,

pital, owing to the same cause, as was the case at *Greenwich Hospital*, in the island of Jamaica; the sick should be removed to some open airy place, or they cannot recover.

With regard to those who attend the sick in these fevers, they frequently fall a sacrifice to its malignity. It is impossible to *live without breathing*; and those who receive into the lungs *putrid vapours*, arising from the sick, will be more or less affected. By feeling the pulses of a number of such sick people, a tingling is felt running up the arm in the direction of the lymphatic vessels. This I have frequently experienced; and thus the putrid matter has been absorbed. For the first, what will prove beneficial to the sick, will save the physician or surgeon; that is, a free air. To prevent the absorption of the putrid perspiration by the fingers, it will be proper to rub the hand over with a little oil, in which camphor has been dissolved: this will infallibly prevent the infection while a practitioner is performing the necessary duties of the profession.

Cure.

Cure. It is a common practice in this fever, to first order the stomach to be washed out with an infusion of chamomile flowers, warm water, or *carduus benedictus*. Some prescribe an *emetic*, afterwards it is common to give one grain of *opium*, in hopes of allaying the irritation in the stomach ; it is too violent a practice to excite vomiting ; and it would be difficult to comprehend on what principle an opiate is immediately given : at first, a violent agitation is excited either by *emetic* or water ; and then, in direct contradiction to this practice, a quieting medicine is administered. From the first beginning of this disorder, bile is vomited up, and emetics commonly increase the symptoms ; besides, the bile may be absorbed by the lacteals, and uniting with the blood, may occasion the yellowness that appears in every part of the body ; exclusive of a probability of the diffused bile promoting the putrefaction that soon commences.

The putrid fevers that happen in hot climates frequently prove fatal ; but this I sincerely believe to be often owing to bad medical treatment. I have known instances
of

of people recovering without any medical assistance ; on the contrary, when the common and most approved methods of cure have been strictly adhered to, the patients generally have died. To bleed is a common practice ; it is more dangerous than in the *putrid sore throat*. Vomiting is too violent ; purges cannot be given, owing to the incessant reachings of bile ; for every thing comes immediately off the stomach. The most approved antiseptics are useless, unless the irritation of the stomach abate ; this seldom happens, for the common remedies increase it. In many cases, no attempts to cure this fever will succeed ; but I shall deliver what I have known to prove successful in many instances ; others may make improvements on it, as opportunities occur.

Whenever this fever happens, the first thing a physician or surgeon should consider, is, to investigate the cause. A high uncleared woodland above a town will produce it, as I remember was the case at the *Grenades*, where it proved fatal to many. It may happen in an harbour or river surrounded by high trees or hills. It may arise from the *bilge water*

on board of a ship; or the *exhalations* from the earth during the rainy months. The causes first ought to be considered, and immediately removed, if practicable. The next thing that should be done, is to *remove* the patient from the place where the disorder *commences*, to a better air: if this cannot be effected in the first instances of sickness, it may soon afterwards, and is the only means of preventing the infection from spreading. As an impure air is the cause of the disease, so is a pure good air a principal remedy; and *no success* will attend any curative intentions, without it can be procured.

As there is an accumulation of bile in this disorder, it is best, if possible, to carry it off through the intestines, by means of gentle laxatives, given in small doses and often, or by repeated clysters; though it may happen, that neither of these methods prove effectual. As a laxative, some decoction of senna and tamarinds, to which may be added some tincture of senna and cremor tartar: a mixture of this sort should be given in the dose of one table spoonful at a time, till it operate. If it should come off the stomach in the first instances,

instances, yet it may be repeated. If the vomiting should cease, the acid vitriolic drink is an excellent remedy, as it cools, allays the extreme thirst, acts as an antiputrescent; and comes in immediate contact with the seat of the disease. I have known it, in many instances, to correct the most putrid evacuations that were discharged downwards. Little else can be done while the fever is in its state of augmentation. To the acid drink may be added camphorated julep, occasionally; but it is best not to attempt too much by medicine, until the stomach will bear the bark. About the second or third day, sooner or later, according to the degree of heat, and the constitution of the patient, if the fever does not prove fatal, it greatly subsides. At this time all the signs of putridity appear about the gums, teeth, nose, and tongue. The mouth and fauces should therefore be kept as clean as possible, to prevent drawing into the lungs the putrid vapour that arises from these parts, which are nearly in a state of mortification. In this state of the disorder, or sooner, if possible, the bark and elixir of vitriol will be proper; but

but it must not be given in large doses. The bark mixture already mentioned may be given, about one or two table spoonfuls at a time, and repeated every hour. Before taking every dose of the bark, the mouth and fauces should be well cleaned, to prevent any of the putrid matter going into the stomach.

If the bark be given during the first stages of the distemper, it sometimes produces disorders of the liver; the fear of this circumstance, however, should not protract for a moment the use of the bark. In the enlargement of this viscus a *salivation* has proved successful in the *East-Indies*; and it is equally advantageous in all warm climates; but I am certain the scirrhous liver is safely cured by calomel and sulphur auratum antimonii in small doses, and frequently repeated, without salivation. In the recovery of the sick, the most nutritious diet is necessary.

Of the Putrid Sore Throat.

The putrid sore throat sometimes appears in February, March, and April, and even

in the autumn, in America. It is not epidemic, and is easily cured by the acid drink, the bark mixture, and being particularly careful in keeping the mouth, tongue, and fauces clean; especially before any thing is swallowed. This method always succeeds equally well in England, unless through a mistake the patient has been bled, or has taken antiphlogistics; it then commonly proves fatal.

There is another complaint which happens amongst men who are exposed to the heat of the sun, and are so imprudent as not to have their heads covered. This makes its appearance similar to the phrenitis, and is a species of that disorder; the patient stares wildly, raves, and is ungovernable. It arises from the power of the sun, and is not uncommon to those who row in boats in hot climates. It is not always a dangerous disorder; for I have often seen it cured. Vinegar drink and camphor are the most effectual remedies, and in plethoric habits bleeding may not be improper; it has proved serviceable. With the administration of the medicines, the patient generally

generally falls into a sleep, perspires freely, and awakes cured:

*On the Method of treating Gun-shot Wounds
in Hot Climates.*

It is not intended here to particularize the treatment of the gun-shot wounds of different parts; but to give some general observations that may prove useful to those who are unaccustomed to hot climates.

For a rational practice, Mr. Ranby's production may be consulted with great advantage; he was the first who introduced a mild treatment.* There is little to be done in these cases, except by dilating the wound freely in the direction of the sinus, if it runs not too deep, or near to any large vessels, nerves, or tendons. No violence should be used in attempting to extract extraneous bodies. In hot climates great cleanliness should be observed, and the patients dressed at least twice; and in large wounds, and hot seasons, three times in the day: on removing the offensive dressings depends the salvation of the patient.

Z 2

During

* *Bilquer, sur l'inutilité de l'amputation,* should be read again and again.

During the fever that accompanies all large wounds, the vinegar drink will be useful. The bark mixture is likewise necessary in many cases, to prevent a mortification; and it may be used liberally.

There is a dangerous practice laid down by that excellent surgeon Mr. Samuel Sharp, with regard to amputation. He advises, in his Treatise on the Operations of Surgery, for the surgeon to wait till a separation happens of the sound from the mortified parts.

This practice has become universal amongst the English surgeons, and in Europe it does not prove unsuccessful; but in hot countries, patients will lose their lives if a separation is waited for: in many instances it never happens; and by the *putrid matter being absorbed into the habit*, an universal putridity of the body destroys the patient. The offensiveness of the discharge may likewise be productive of an epidemic malignant fever.

In all gun-shot wounds, large ulcers or other cases that may require amputation, it is best to perform it early; this practice is suc-

successful in all hot climates, where the common methods are generally destructive.

In all large ulcers that are spreading, which happen from the venom of insects, &c. and have a tendency to mortify, the bark mixture will be found the most effectual medicine. The nitre, though an excellent remedy in northern countries, is injurious in those climates.

Of the Locked Jaw.

This disorder is not uncommon in hot countries, and is the companion of gun-shot wounds, ulcers, and amputations; or it may arise from accidents, as splinters, puncturing the tendinous or nervous parts; wounds of the joints, and lying in the open air at night in the damp foggy seasons.

Opium, musk, and warm bathing, are recommended by different writers.

I have tried all these methods, but never in one instance with success; for all the patients thus attacked, who came under my observation, died. This is not mentioned to discourage practitioners from attempting the cure of this

this alarming affection ; every method should be tried that may be suggested, and whoever discovers more certain remedies than those at present known, will well deserve the esteem of all mankind.*

Some Remarks on the Medical Preparations for the Use of hot Climates, and the Manner of preparing the principal Compositions mentioned in this Essay.

There are several medicines that are sent out by government to hot climates, that become useless before they reach the place of their destination. Of this class are all confections, conserves, syrups, electuaries, some vinous tinctures, and several powders. The first ferment, spoil, and are soon unserviceable. The powders, through the dampness of the places on board of the ship in which the stores are stowed, become inefficacious. Several of these articles to the navy surgeons are very expensive ; in the army, where the supplies are allowed by government, it becomes an unnecessary

* How the *locked jaw* has been actually cured at the St. Mary-le-Bone Infirmary, may be seen in the former part of these writings, under the article *Tetanus*.

unnecessary expence to the nation. Nothing can be more absurd than to send out a vast quantity of useless drugs to be thrown over-board, when at half, nay, one third of the expence, the whole army and navy might be furnished with things more essentially necessary for preserving the lives of the soldiers and seamen.

List of Remedies.

Æthiops mineral	Lime juice
Balsam of Sulphur with turpentine	Liquid laudanum
Bark, Peruvian	Mithridate
Borax	Manna
Calomel	Magnesia
Camphor	Nitre
Chalk	Olive oil
Dragon's blood powder	Senna
Elixir of vitriol	Spirit of hartshorn
Extract of logwood	Salt, Glauber's
Goulard's extract	Tartar emeticum
Jalap powder	Tamarinds
Japan earth	Tinctura sacra
	Vinegar
	Vinegar of squills

*Preparation of some of the Remedies.**Campbor Julep.*

Take of camphire one drachm ; the finest sugar half an ounce ; cold water one pint ; let the camphire be ground first with a little rectified spirit of wine, till it becomes soft, and then with the sugar, till it be perfectly mixed ; afterwards add the water by degrees, and then strain it off. Put it into a bottle closely corked.

Chalk Drink.

Take of powdered chalk one ounce (prepared chalk, if it can be procured) ; the finest sugar three quarters of an ounce ; gum arabic half an ounce, let them be mixed.

A decoction of cinnamon might be used for the foregoing preparation ; half an ounce of cinnamon, or more, may be beaten and boiled in a quart of water,

Musk Julep.

Take of rose water, or, where that cannot be procured, common water, six ounces ; musk

musk twelve grains; the finest sugar one drachm; pound the sugar with the musk; and then gradually add the water.

Clysters.

Take of sea water half a pint, sweet oil one ounce. Let the sea water be made sufficiently hot for the purpose.

Another.

Take of common water, made hot, half a pint; dissolve it in about three quarters of an ounce of table salt, then add about six table spoonfuls of sweet oil, and a little coarse brown sugar.

For an anodyne clyster, in case of violent pain in the intestines, in the diarrhoea, or dysentery, to a quarter of a pint of chalk, drink may be added, from forty to sixty drops of liquid laudanum.

Decoction of Peruvian Bark.

Take two ounces of Peruvian Bark, let it be grossly beaten, then add three pints of water;

water; let it be boiled over a slow fire till one quart only remains.

Decoction of Tamarinds and Senna.

Take of tamarinds six drachms, chrystals of tartar two drachms, water one pint and a half; boil them in an earthen vessel till there remains only a pint of liquid. While this is boiling hot, put into it half an ounce or more of senna leaves, and let it stand about twelve hours. This must not be made in any other vessel than an earthen one.

This must afterwards be strained off. As a laxative in malignant fevers, a table spoonful, or more, if the stomach will bear it, may be given every hour till it operates: as a laxative in inflammatory complaints, and for other purposes, a much larger quantity may be taken. This however is not proper in either the diarrhœa or dysentery.

*Laxative Medicines proper for the Diarrhœa
and Dysentery.*

Take of olive oil about one ounce, mix it in a marble mortar with about two drachms of

of thick mucilage of gum arabic, or the yolk of an egg; then gradually mix an equal quantity of water with it. A table spoonful or more of this may be taken every two hours.

Another.

Dissolve an ounce of manna and half an ounce of Glauber's salt in four ounces of water. Two table spoonfuls of this solution may be taken every four hours.

A drachm of magnesia may be taken in a little water every four hours.

Mixtures for the Pleurify, or Peripneumony, that happen on Ship-board, in the colder climates.

Dissolve two or three drachms of purified nitre in about eight ounces of water; to which is to be added one drachm of the vinegar of squills.

Three or four spoonfuls may be taken every three or four hours, when expectoration is to be promoted.

The

The oily Mixture for Coughs.

Take of oil of almonds, or olive oil, two ounces; common water five ounces and a half; powdered nitre two drachms; spirit of hartshorn eighty drops; let these be well shaken together in a phial. Then add sixty drops of liquid laudanum and sugar sufficient to make it palatable. Three spoonfuls may be taken every three or four hours, according as the cough is violent.

For persons who are very nervous and irritable, the quantity of liquid laudanum must be lessened.

The mithridate, and all the cordial confections, are unfit for a hot country; as a substitute for the mithridate, a little of the aromatic spices and a portion of liquid laudanum will not be improper: but opiates with warm spices should never be administered where the patient labours under any degree of feverish heat. In the diarrhoea and dysentery, the liquid laudanum alone is better as an opiate than any other preparation.

Having

Having delivered, in a concise manner, the common diseases that happen in sea voyages, and hot climates; with their causes, prevention, and cure; it is to be wished that the preventive methods may be seriously attended to; if they are, little sickness will most probably prevail. If unfortunately, however, diseases should appear, the methods of cure already recommended are safe, efficacious, and simple: success in the whole art of medicine depends on simplicity in practice. Mild, gentle methods, cannot be too strongly inculcated, not only in the cure of the foregoing disorders, but in most to which the human body is subject. The description of the putrid fever may appear horrid; it were to be wished it was to be less fatal; but a strict regard to truth makes it necessary to publish the ill as well as good success of its medical treatment. Some happiness may however arise from a probability of preventing its dangerous ravages by cleanliness, and making choice of the most healthful situations. In the administration of bark, or elixir of vitriol, some farther precautions are necessary; they should rarely be given if the patient

patient has a cough, difficulty of breathing; or disorder of the breast; and if the bark should prove purgative, about five drops of liquid laudanum may be taken occasionally; but this should be omitted when the lax disposition is removed.

The acute *rheumatism* may be treated by bleeding, &c. as the inflammatory fever; with the addition of blisters to the pained parts.

The *dropfy*, by purges of jalap, ginger, and large doses of tremor tartar every third day; and, in the intermediate days by bitters, chalybeates, and tonics, except in difficulty of breathing.

The *jaundice* is cured by calomel in small doses, with any aloetic pill, every night; and a solution of soluble tartar, and rhubarb *bis de die*.

These are the principal army and naval diseases, both in Europe, and in hot climates.

A
T R E A T I S E
ON
D I E T,
&c. &c.

САНКТ-ПЕТЕРБУРГ

ДРЕВЛЕ

TREATISE ON DIET,

&c. &c.

PRACTICAL and useful institutes of physic should be founded on numerous observations, judiciously collected, without the least partiality to any received system; they should not be formed on extraordinary, or singular cases that rarely happen: the former, however, being more laborious, has been less pursued than the latter. It is not difficult to surprise by the marvellous and singular sportings of nature; but it requires time, genius, and patient reflection, to be convinced by numerous facts, profound reasonings, and judicious conclusions. How easy is it to repeat what has been prescribed by dietetic authors: but to ascertain the foods necessary for all persons, is a subject replete with difficulty; for mankind

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differ

differ in their constitutions, inclinations, feelings, customs and exercises. Sympathies and antipathies are innumerable, inconstant, unaccountable ; the stomach wavering and capricious ; therefore an inclination or abhorrence for different foods amongst individuals, should be accurately considered, and plans of diet should be adapted to a variety of circumstances. Hence the absurdity of the various projects of dietetic authors, who would feed mankind in health or sickness, as though all were exactly alike in constitution, &c. &c.

The writers on diet are often full of contradictions ; their schemes seem formed on a supposition, that all human stomachs receive and digest aliment alike, or in a manner similar to *Papin's Digester*, or as phials of food placed in the experimental chemist's sand-heat. They appear to forget, that, although these experiments throw some glimmering light on these subjects, yet they must often fail in producing just inferences. Different aliments may be masticated and mixed with saliva, the drinks human beings indulge in, may be added : how the *gastric juice*, or

what is exhaled from minute arteries, so various in its particles, may be substituted to imitate nature, is not easy to determine. Substances thus prepared by the mouth, &c. may be placed, and remain enclosed in a bladder or phial, put into a sand-heat, regulated by a thermometer, to accord as nearly as possible with the heat of the stomach. After the first process of digestion and separation of the aerial particles, and finer fluids from the grosser parts are accomplished, a small portion of *animal bile* and *saliva*, instead of *pancreatic juice*, to which it is similar, may be added, to imitate the natural changes in the *duodenum*: yet, after all these imitations, neither a pure chyle from the more fluid particles, nor can excrements, like the human, from the grosser alimentary substances, ever be separated or produced. How remote then must such experiments be to nature and truth? Yet warm imaginations have invented, and credulity inadvertently sanctifying the delusion, have built hypothesis on hypothesis from such crude and superficial materials. If even *true chyle* could be separated, and *human excrement* be obtained by these

imitations ; the time and manner be adjusted of digesting all the different foods in use, and could *pure blood* be produced from this artificial chyle, which circumstances have never happened, yet a difficulty starts that appears insuperable ; namely, the different sensations and effects observable in each individual, when feeding exactly on the same substances, at the same periods of time, using the same exercises, and respiring the same air. The human mind, it cannot be denied, has an extraordinary power in promoting or retarding digestion, chylification, sanguification, the secretions and excretions : now as the minds of mankind so materially differ and suffer, the digestive, or other natural, the vital and animal functions, can never be reduced to one standard ; neither can digestion nor the other dependant circumstances : therefore, all conclusions drawn from such uncertain and capricious principles, should only be esteemed as visionary chimeras. When the experimenter can inspire the phial containing the food with *joy, grief, fear or anger* ; when he can give it *muscular motion*, or imitate *vascular action*, and human exercises ; when it can receive

receive *atmospheric air* by inspiration, and reject an insalubrious *mephitic air* by expiration ; when, in short, he could give it all the human *viscera*, with their various powers, and animate the inanimate bottle and its contents, the same as in life, then would the experiments be more adequate and relative to the subjects ; but while all, or most of these fail, all the imitations must necessarily be extremely inedquate, feeble and dubious, for the purposes intended. To give a greater latitude to the supposed utility or permanency of such experiments, let it for a moment be allowed, that the antecedent conditions of vivifying the phial and its contents were attainable ; yet it would not then answer the grand points ; for every one has his own individual digestion, secretions, and evacuations of the excretions, dependant on form of body, state of parts subservient to many functions ; mode of thinking, sensibility, torpidity, &c. consequently the variety is infinite, and so far from being ascertained, or determined by loose, and often ill-conceived, irrelative experiments, or whimsical or singular conceptions, a precise knowledge of the subject

subject may ever remain beyond the utmost reach of human comprehension.

The application of diet, on narrow principles, therefore, must be always futile; but in practice it has been too often adopted. It is not, however, intended, by these animadversions, to suppress the pursuit of philosophical experiments or enquiries; for true demonstrations have been the result of many difficult investigations: but to prevent error, by the misapplication of crude conjectures, or by the unsubstantiated opinions of whimsical and singular framers of systems.

Few, very few, have thought for themselves; men build their faith and practice on the speculations, and often absurd conjectures of others; many have seemed more solicitous to know, what has been said, than to discover, whether what has been said, be true or false, rational or irrational. *Tempora mutantur;* erroneous doctrines are now freely examined and refuted, and true learning is not satisfied with uncouth words of no meaning, as substitutes for things. How many fallacious systems have appeared and vanished, let the history of medicine recite; how much mischief they have

have produced amongst society, no being can calculate.

The conjectures on digestion perplexed the ancients; but they exercised their faculties on these subjects with, perhaps, much less success than the moderns; they had no lights from chemistry or pneumatics. *Celsus*,* near 1800 years ago, says, "That some, with their leader Erasistratus, contend, that food is digested in the stomach by *attrition*; others, with Plistonicus, the disciple of Praxagoras, by *putrefaction*; others, upon the credit of Hippocrates, suppose concoction is effected by heat. After these follow the disciples of *Asclepiades*, who hold all these hypotheses vain and supervacuous; for there is no *concoction* at all; but the matter, crude as it is received, is distributed through the whole body."*

In

* ——duce, alii, Erasistrato, alteri cibum in ventre contendunt: alii Plistonico, Praxagoræ discipulo, putrefactare: alii credunt Hippocrati per calorem cibos concoqui. Acceduntque Asclepiades æmuli, qui omnia ita vana & supervacua esse pronunt. Nihil enim concoqui, sed crudam materiam, sicut assumpta est in corpore omne diduci.

From

In another part of *Celsus* are delivered the effects of various foods, under different classes;

From various Authors.

- De Chyli Secretione—Berger, 129.
- Attritio—Erafistrati, Pitcarnii, Hecqueti, Borelli.
- Putrefcere—Plistonico.
- Calore concoqui—Hippocratis.
- Crudam materiam in corpus diduci—Asclepiades.
- Fermentatio.
- Eliquatio.
- Solutio.
- Agitatione }
Comminutione } ventriculi chylis emulsio est, 146.
- Maceratio.
- Aër vi sua elasta poros ciborum divellit, liquat, calore vif-
cerum.
- 132 Subacta ac commolita, saliva imbuta, massa ciborum, com-
motione ventriculi, diaphragmatis compressione, lympha
gastrica, vijn septicam acquirit macerandis, dissolvendis,
ac liquendis necessariam, quod menstrui, itemque fer-
menti nomine insigniamus.
- Quippe cum acie & elaterio liquoris illius ac perspirationis
interioris, exagitata intus contentorum corpuscula, plus
minus fermentescant, dissoluta massa in intestina truditur,
tum novis humoribus additis, bile, succo pancreatis lym-
pha glandularum, commiscetur; chylus fit per vasorum
lacteorum absorptionem.
- Percolatione } per motum peristalticum, & agitatione in-
Expressione } testinorum.
- Constrictione.
- 146 Chylus non ingreditur renas meseraicas.
Chylus est emulsio.

Lieutard

classes; as what contain good, bad, mild and acrid juices, &c. which clearly explain the diet of the Romans, in the Augustan age.

Erasistratus had the opportunity, horrid to mention, of cutting open condemned criminals alive, which seems the readiest mode to acquire indisputable demonstration; he supposed digestion was performed by attrition: but, perhaps, this opinion was drawn from

Lieutaud Physiol.

- 306 Digestio est stomachi elaboratio—lympha gastrica—maceratio—solutio.
- 108 Calore elatur aëris.
- 109 Actio spirituum animalium.
- 110 Tres causæ digestionis: 1. Liquidum e saliva & potu.
2. Calor. 3. Vis contractilis stomachi, intestinor. &c.
“ nulla datur fermentatio int̄ ventriculo, nec tritu perficitur.
- 112 De chylosis, quid bilis? 114. in succ. pancr.
Chylus intrat vasa lactea & venulas mesentriças.
- Plenck. 171. Instrumenta ejus sunt, calor, aër, saliva, mucus, mot. peristalt. diaphr. fermentatio.—Chylus fit trituratione, solutione, fermentatione.
- Caldan. 291. Calor, aër, motus, humoris, saliva ventriculi, &c.
- Ludwig phys. § 373, 374, 478. Liquores ventriculi, calor, pressio partium—solutio.
- § 374 Longe diversa est digestio a putrefactione & fermentatione.
- 377 Trituratio locum non habet in homine, sed in animalibus quæ dentibus carent.

from *birds*, not from *human subjects*, and it has never been satisfactorily proved by his followers ; nor can such attrition be supposed to happen in the human stomach.

The moderns have asserted, that digestion is performed by fermentation, chymical effervesces, attrition, dissolution, heat, solvent liquors in the stomach, maceration, trituration, agitation of the stomach, comminution, by an expansion of air, saliva, mucus, and contractile or peristaltic motion of the stomach and intestines, pressure of the diaphragm and abdominal muscles, and by many other means too tedious to mention in this treatise.

These diversity of opinions, at different periods, have been received as sacred truths, taught publicly in medical schools ; credited by students, and defended with such zealous fury, while they remained in fashion, as to have brought down the vengeance of the whole profession on any one who dared to doubt their infallibility. Some professional men, however, of discernment and reflection, must have always discovered the delusions

lusions of their time, but often failed of courage to attack them : they peaceably and publicly seemed to approve what they privately censured or condemned. It is exactly the case at present, in several European hospitals on the Continent, where the professors of extraordinary talents and merit, are ever oppressed or crushed, and mean obsequiousness, with moderate abilities, cherished and protected : for pride and false science, when advanced high in the profession, by artifices, have nothing to fear from incapacity and ductility.

It must evidently appear, that many opinions are not true, some are highly contradictory to others ; therefore some must, necessarily, be false ; upon such tottering principles, however, have contradictory schemes of regimen been formed, and hence arises the diversity of opinions concerning diet, nutrition, &c.

From such superficial *data*, or perhaps no *data* at all, but rather to appear singular, have some practitioners, blinded by prejudice, condemned or praised every food in use ; some have

have violently recommended vegetables, frequent purging, repeated bleedings, rennet whey, butter-milk, and starvation; others animal diet; some freedom in wine and strong spirits; others abstinence from all fermented liquors; even bread and potatoes, on which the laborious part of the human species chiefly feed, have been considered as *rank poisons*. Some writers have recommended raw meat, flatulent small-beer, and intoxication once a month, as conducive to the preservation of health among invalids.

It is more rational to examine with a cautious eye, the various extravagant hypotheses on diet, digestion, nutrition, &c. than to follow many rules as yet promulgated: for some, in directing regimen, have more attended to the caprices of their own individual stomachs and feelings, than to the inconstant mutations of human nature.

To illustrate the assertion, natural meagreness, a sour temper, and a bilious complexion, may often perceive every thing with a jaundiced, miserable, and envious eye; the mental susceptibility and irritability will produce a depraved

depraved appetite, indigestion, constipation, with a variety of inexpressible sensations, according to the impressions of air, seasons, exercises, diet, and passions. A physician of such a constitution, and under such influence, has been known to regulate the diet of all patients indiscriminately, by his own feelings and self-experience ; this, however, is an erroneous judgment, productive of mischief to constitutions that differ.

Another physician, not accustomed to deep reflection, but to the indulgence of a cheerful glass of generous wine, to feasts, company, and conviviality, has concluded, from his own constitution being able to support such freedoms, that health consists, and is preserved by irregularities, and a superabundance of luxurious foods and wines; yet, this is certainly not a true, but a partial conclusion ; for numbers have been destroyed, before they have been seasoned to such excesses.

A third physician, of thin, slender, pale habit, who has passed through life with potatoes, turneps, and water, and a vegetable diet, who has preserved a cold inanimate health, and escaped

escaped from dropsy, or, in his own opinion, prevented some imaginary chronic calamity, has concluded, that meats are next to poisons, that vegetables and water are salutary, and all deviations from such regimen injurious to all mankind. This is equally erroneous, for it has destroyed thousands, when misapplied.

A fourth, very corpulent, merry, and incapable of muscular exercise, will frequently suppose any strong muscular exertions very injurious to human tranquillity, or health; indolence and absence of all care, dissipation and thoughtlessness predominate; he will censure anxiety and earnestness on any occasion, as conducive to diseases, and may infer from his own feelings, observation and experience, that deep studies and reflection are productive of bad juices, while, on the contrary, the surest road to health, ease, and happiness, is a relaxation from all labor and meditation.

Others read much, digest little, and have a blind faith in authors; these are as unsettled in their opinions and practice, as the oracles they

they have consulted, but they commonly believe the last they read.

The early-rising country fox-hunter will eat fat bacon, or beef, and drink strong ale, brandy, or wine in a morning, without immediate ill consequences ; the very recital of which creates a nausea amongst many delicate and refined people in large cities.

The brandy and claret drinker praises brandy and claret, the milk and water drinkers their favorite liquors, and all are apt to think themselves right in their various passions or inclinations, and, what is worse, warmly recommend the same modes of living to others, as the essence of wisdom, without reflecting on the difference of constitutions, or foreseeing the consequences.

Numerous instances of these facts cannot escape the most vulgar observation ; nor have they failed of receiving keen censure, and theatrical ridicule ; because they are repugnant to common sense : it does not require medical knowledge to perceive their absurdity.* What mischiefs ensued from Dr.

Cheyne's

* Doctor Sangrado, in *Gil Blas*, is not a mere satire on bleeding and warm water, but comprehends any other absurd medical

Cheyne's vegetable regimen? What numbers were destroyed in this island by its influence? How deaf were its followers to the voice reason, while the mad fury raged? Humanity must reflect with horror on the many human victims sacrificed to folly and delusion at the doctor's altars in *Bath*.

A multiplicity of such instances might be added, but do not these sufficiently demonstrate the variety of constitutions and sentiments, arising from habit, education, country, custom, examples, &c. amongst the medical profession? Does it not appear on reflection, that what may be salubrious and necessary to one, may, on the contrary, be extremely hurtful to another? Let the free liver change to water-drinking or small beer, and will not a dropsy or some chronic disorder be the consequence? Imagine the water drinker to indulge in the excesses

prejudice: as to *Moliere*, he exercises his wit frequently, at the expence of the faculty, not without justice. and in a vein of humour highly satirical, exciting the most lively risibility amongst those, who can join in a laugh at the palpable absurdities of their profession.

cesses of high feeding, wine, and conviviality, would not a fever, delirium, or inflammation of the brain be the consequence? All sudden changes of diet produce hazardous effects: human bodies and minds are differently formed; inclinations, exercises, pursuits, are different; all require a different treatment. Whoever, therefore, forms plans of cure; or diet for others, on any narrow plan, but especially on the confined principles of his own constitution, habit, or feelings, must be in error, and do mischief.

It will be readily admitted, that every sensible individual must be, by his own sensations, the properest judge of what agrees, and what disagrees in health, but not under disease; such self-evident facts are scarce disputable; it is not difficult to discover, that temperance is salutary, intemperance injurious and destructive; some things strengthen, others debilitate; from these springs of intelligence, all true practical knowledge of diet should flow: but for any physician to recommend or condemn regimen, in proportion as it affects him, or single individuals, is highly irrational, and must be productive of

injury. These facts will be acknowledged by all reflecting and unprejudiced physicians, and only denied by those who have adopted singular and confined notions.

As to health and long life, there are singular histories of both, by every mode of regimen. Water or tea drinkers, brandy drinkers; those who live on milk and vegetables, the temperate and intemperate; those who have avoided or embraced all excesses; singular instances of such enormities or abstinence, are not admitted as general rules for practice: for though one person may now and then escape from the effects of improper diet, or the greatest intemperance, yet hundreds are sacrificed to Bacchus.

In prescribing diet then, the form of body, age, sex, mental feelings and propensities of each individual, should be first consulted, and the accustomed mode of living, whether productive of health or disease; for the best general precepts may be very exceptionable, when applied to several particular instances; hence the irrationality of numerous singular regimens to be found in authors. Mankind are often too much their own enemies, to

listen

listen to the voice of reason or medical advice on diet, when it abridges them of their principal pleasures or propensities: physicians may advise, but cannot force mankind to their own benefit.

After having thus premised the difficulties the art labors under, in recommending the necessary diet for mankind in general, a plan of directions shall be communicated, adapted to different constitutions, ages and sexes, the result of observation; which, though it must be confessed is imperfect; yet it may be more applicable to the diversities of human nature and medical practice, than what perhaps is found in many more elaborate works on those subjects.

In adapting diet to preserve health, the good and bad effects of food should be considered individually; neither corpulency nor extreme meagreness are signs of the most healthful constitutions; the happy medium between both is most desirable. In the former, a diminution of drinks and liquid spoon meats, avoiding flattening foods, such as butter, cream, and fat meats, as likewise all ales, small beer, flatulent and leguminous

B b 2 diet,

diet, are necessary ; for by these means the most enormous bulk of body may be lessened ; and by eating lean meats, and drinking in great moderation, austere drinks, as red wine, &c. a firmer fibre, and more activity and bodily or muscular strength, may be acquired in subjects, if the viscera be sound.

In meagreness, the causes being considered, which are commonly an imperviousness of the lacteal system, in conjunction with a destruction of the oleaginous particles of the diet, during digestion, or chylification, the reverse of the former method may be recommended. In both cases, the agreement or disagreement of foods in the stomach are to be particularly observed ; for no diet can be proper which produces uneasy sensations during digestion ; simplicity in diet ought to be preferred to incongruous mixtures ; a great variety at table is certainly tempting, but generally injurious.

A fuller diet may be allowed to those who exercise, than the sedentary ; to the thoughtless than the penive ; to the young than to the old ; in the more cold than in hot climates ;

mates; in moist than in dry air. All business that requires meditation or deep study should be always avoided on a full stomach; as great exertions of the mind retard or prevent digestion, and force a great quantity of blood to the head; the consequences of which, by being too often repeated, may lay the foundation of nervous diseases, epilepsy, apoplexy, or palsy. These general sentiments being premised, how the human body is nourished, shall be next considered.

Deinde illa, cum vibrat et dilatatur, tamen
hunc vibrum quod non solum ex contractu sed
et dilatatione illa ~~non~~ ^{est} huius levigatio se-
pungit in hunc dilatationem, atque hoc est resum-

DIGESTION, CHYLIFICATION, &c.

io manipulatio, cum vibrat et dilatatur

venae levigatio non poterit, quia dilata-

~~or~~ THE

caecum levigatio non poterit, quia dilata-

MANNER BY WHICH FOOD IS PREPARED, RECEIVED,

AND CONVEYED TO THE BLOOD FOR NOURISHING

THE HUMAN BODY.

THE human body is constantly losing many of its component parts, by continual motions, attrition, and expulsion; so that a man daily loses by perspiration, urine, feces, &c. at least about six or eight pounds: a reparation was therefore necessary, and this is called *nutrition*.

The substances which supply the losses the human body sustains, is nominated food or aliment.

Foods are composed of water or other liquids, animal and vegetable substances.

The solid parts of the human body are restored by the glutinous mucilage of animals

or

or vegetables ; the blood and fluids are repaired by the liquid aliment or drinks, moist air, &c.

The principal particles of which the blood are composed, are found in the foods, as the gelatinous and oleous parts of animals, and the tempered oils of vegetables, water, saline, earthy substances, &c.

On Hunger and Thirst.

There are two sensations common to all animals, *hunger* and *thirst*; the former is the desire of food, the latter of drink.

The seat of hunger is principally in the stomach, and is supposed to arise from the irritating quality of the *succus gastricus*, flowing from the mouths of exhaling arteries, or stomach juice acting on the nervous coat of the empty stomach, which communicating its effects by the nerves to the brain, hunger being excited, is perceived in the *sensorium commune*.

Hunger forces man to seek aliment, and it is a principal stimulus to industry to obtain it.

Thirst

Thirst appears to be seated in the nervous *papillæ* of the stomach, œsophagus, fauces and surface of the tongue, and it is conveyed to the brain by means similar to hunger.

Mastication or chewing Foods.

Mastication is the reducing the solid food received into the mouth by means of the teeth, so as to fit it for swallowing or deglutition.

During mastication, the food is moistened with the saliva or spittle, which flows from the salivary glands.

The chewed or masticated food with atmospheric air, is conveyed from the mouth through the œsophagus or gullet, which passage is lubricated by a mucus partially mixing with the descending food.

The food thus prepared, is certainly the commencement of digestion. The inability of performing this first process perfectly, must occasion a material difference in the necessary force of the stomach in producing a good digestion. Defects in the teeth will prevent perfect mastication, and diminished saliva will render the food less moist; and, if the

the saliva be acrimonious, which it sometimes is, the digestion in the stomach may be quite different and less salubrious.*

Deglutition.

Deglutition or swallowing is the descension of the masticated food from the mouth into the cavity of the fauces, and from thence through the œsophagus into the stomach. A philosophical investigation of this action is extremely curious; but as it is explained in another work, it is here omitted.

Digestion.

Digestion is the change and preparation of food in the stomach, for the purpose of nourishing the body.

The means, by which digestion is performed, and the aliment changed are various.

1. The humidity in the stomach exhaling from the arteries, softens and macerates the foods.

* The saliva is sometimes so acrid as to excoriate the gums, and very often to injure the teeth; this I have seen happen to very nervous irritable patients, particularly in great affections of the mind.

2. The atmospheric air swallowed, and what is attached to the foods themselves by heat and moisture, are expanded, extricated, and the mass rarefied.

3. The saliva or spittle constantly swallowed; the gastric juice secreted from the exhalent arteries of the stomach, perpetually soften, dilute, and dissolve the foods.

4. The mucus swallowed, and the mucus secreted in the glands of the stomach, unites the oily parts of the aliment with the aqueous or watery part of the gastric juice, saliva, or drinks.

5. The peristaltic motion of the stomach constantly moves and commixes the foods.

6. The pressure of the abdomen in respiration, which the diaphragm and abdominal muscles perform, continually occasions some attrition of food in the stomach.

7. A spontaneous fermentation of the aliment is excited by the mixed aliment, saliva, gastric juice, heat, and air; from hence it is supposed, that the mutation of foods in the stomach, is performed by

1. *Trituration,*

2. *Solution,* and

3. *Fermentation.*

The effect of digestion is, therefore, the mutation of foods into a fermenting mass of a nauseous smell and taste.

The thinner sort of this particular mass is perpetually expelled through the *pylorus* into the first intestine, or *duodenum*, by its weight; by the peristaltic motion of the stomach, and compression of the abdomen.

The grosser and more indissoluble parts are longer retained; as tenacious membranes, bones, skins of leguminous foods, and some fruits: these are frequently expelled without any considerable alteration.

The use of digestion is commencing the change of foods into chyle.

Chylification.

Chylification is the mutation of the digested aliment into chyle, which is a milky fluid, exhaled from foods and drinks.

The organ in which chylification is performed, is the small intestines.

The digested aliment is converted into chyle, by the following means:

1. The continual contrition from the peristaltic

ristaltic and antiperistaltic motion of the intestines, and pressure of the abdomen.

2. The copious dilution of the mass by saliva, gastric juice, the fluids exhaling in the intestines, and the pancreatic juice.

3. The cystic and hepatic *bile* is poured out into the duodenum, by which the mucous, serous, and oily parts of the digested mass are united, and separated from the grosser; the finer parts with the secreted juices, therefore, constitute the united chyle.

The effect of chylification is, that the color of the digested mass, its taste and smell, should be altered into a fine white humor, sweetish, inodorous, and similar to milk.

Chylification is sooner performed than digestion, and is finished, if there be no morbid impediment, within three or four hours.

On the passing and converting the Chyle into Blood.

The preparation of chyle being finished, it is attracted and absorbed by the lacteal vessels, which are situated on the internal surface of the small intestines: these, like a sponge, attract

attract and receive the chyle, or milky fluid. The grosser particles of the digested aliment, that cannot be converted into chyle, under the name of excrement or feces, are propelled to the large intestines to be evacuated.

In the stomach some of the oleaginous particles of the food are absorbed and conveyed to the breasts of women who suckle their infants, to be converted into milk.

A part likewise of the secreted humors in the stomach, and first intestine, passes to the liver, by the meseraic veins; so that, contrary to some modern anatomists, there is *venal absorption* independent of the lymphatics; and if it be true in two instances, it may be so in many.*

The powers propelling the chyle into the lacteal vessels, are:

1. The *absorbing* or sucking force of the lacteal vessels, similar to *capillary* tubes in the attraction of fluids.

2. The *adhering* power of the chyle to the small mouths of these vessels.

3. The

* Objections to the lymphatics being the only absorbent system, are given in the *Schola Medicinae*.

3. The *distention* of the intestines with air, by which the lacteal tubes being stretched in direct lines with the mesentery, the passage of chyle is facilitated.

4. The peristaltic motion of the intestines, and pressing force of the abdomen, by which the internal superficies of the intestines are compressed, and the chyle immerges itself.

The greatest absorption of the chyle is in the intestine *jejunum* and *ileum*; little in the *duodenum* and large intestines.

The passages of the chyle from the intestines are :

1. Into the *vasa lactea*, or lacteal vessels, and mesenteric glands; from those,

2. Into the *receptaculum chylī*; and from thence,

3. Through the *ductus thoracicus*, into the left subclavian vein, where the mixed chyle flows drop by drop, and mixes with the venal blood.

Thus are the finer parts of food, by digestion, chylification, and a passage through the lacteals, *receptaculum chylī*, and *ductus thoracicus*, converted into blood.

The moving powers which force the chyle through the lacteal passages are :

1. The pressure of the lacteal vessels from the contraction of the abdominal muscles.
2. The pulsation of mesenteric arteries contiguous to the lacteal vessels.
3. The strong contractility of the lacteal veins, and *ductus thoracicus*, as likewise the propelling force of the chyle.
4. The motion of the respiring organs, or breathing.

The retrogression of the chyle towards the intestines, or in the *ductus thoracicus* is impeded :

1. By the valves of the lacteal vessels, or *ductus thoracicus*.
2. By the diameter of the lacteal vessels perpetually increasing.
3. By the force of the chyle pressing on from behind.

The chyle passes through several glands situated in the mesentery, which are principally a congeries of lacteal vessels interwoven in a tortuous manner. These being tumefied or obstructed, cause many grievous diseases from impeding nutrition ; as consumption, or

or wasting of the body without cough, vitiated blood, &c. and are common to all scrophulous habits.

When the chyle is absent, the secreted humors in the stomach and small intestines, pass through the chyliferous vessels.

The ingress of the blood from the subclavian vein, into the *ductus thoracicus* is impeded by a valve, situated in the mouth of the duct.*

The chyle is changed in its way to the blood.

1. It is more diluted by the lymph from the lymphatic vessels, which is brought to the receptaculum chyli, and thoracic duct, from almost all the extreme parts of the body.

2. The chyle is impregnated with the nutritious gluten or jelly, by mixing with the coagulable lymph brought by the lymphatics.

3. From hence a greater animalization of the chyle, by which its crude state is more changed, and rendered fitter for mixing with the blood.

The

* All these facts are demonstrated by indisputable experiments.

The uses of the chyle,

1. By the help of the chyle the principal particles constituting the blood are conveyed; from which the blood, the other humors, and solid parts are composed: as for example, much water, oil, salts, jelly, mucus, fixed air, and a small portion of earth.

2. By the assistance of the recent chyle the putridity of the blood and other humors is prevented.

Sanguification.

Sanguification is changing the chyle into blood.

The chyle, when mixed with the blood, does not thoroughly become blood in less than twelve hours: but within this time, it is thrown 120 times with the blood through the lungs and the whole body.

In this circulation :

1. The oily part of the chyle is partly deposited in the adipose cells of the body, and partly seems to be converted into the red particles of the blood.

2. The *gelatinous* parts of the chyle are attracted, and circulate chiefly in the lymphatics, and forms the coagulable lymph.

3. The *serous* and volatile parts, which are in a small degree gelatinous, dilute the blood and humors; and, perhaps their saline particles act as *stimuli* on the nerves, to promote action in the solids.

4. The *earthy* parts of the chyle are consumed in the nourishment of the bones, and solid parts of the body.

Sanguification requires, that the *chylous globules*, which are white, lighter, and larger than the globules of the blood; should become *red, denser, heavier, and smaller*.

The *redness* seems to be made, if the chylous globules, by long attrition in the red vessels of the lungs and in muscles, be mixed with a *martial earth* and fixed alkaline.

The *greater density* of the chylous globules arises, probably, from a long and repeated compression in the minutest vessels, and by the exhalation of the more volatile and finer particles.

The *gravity or heaviness* arises from density, and the admixture with martial earth;

the portion of which, however, is very small.

The diminution of the chylous globules seems to depend on their attrition and compression in the minutest vessels.

The uses of sanguification are, the generation of blood, which serves to fill the blood vessels; to irritate and stimulate the heart and arteries; to generate or cause heat; to secrete the humors, and to excite the vital actions.

On Nutrition.

The human body continually suffers losses by the dissipation or evacuation of its component particles, the replacing of which by nutritious juice is called nutrition.

The solid particles of the human body are continually destroyed by the vital actions, and the fluids are eliminated, and thrown out of the body.

The causes by which the particles, forming the solid parts, may be destroyed, are:

1. The violent motion of the humors through large and small vessels, by which the internal superficies suffer great friction.

C c 2

2. The

2. The perpetual motion of the muscles, which acts forcibly on the *tela cellulosa*, and vessels.

3. The constant actions of all the viscera.

4. The corporeal muscular frictions and action of air.

By these causes the earthy elements and gluten of the fibres are rubbed down and destroyed, mixed with the circulating fluids, and, lastly, evacuated.

The means by which the fluids are diffused and evacuated, are :

1. Transpiration and sweat.

2. Urine.

3. Alvine feces, or excrements.

4. Spittle and mucus of the nose, and other parts.

5. The menses, and often the semen.

The remaining humors by these evacuations are deprived of their aqueous vehicles; from which they become thick, putrid, or acrid.

From hence it appears evident, that, unless the quantity and quality of the humors lost be restored by daily nutrition, the human machine must perish, as long abstinence from food

food demonstrates. The parts lost are both solids and fluids; from hence the necessary nutrition of the solids and fluids.

Nourishment or reparations of the fluids are produced in the subsequent manner.

1. The butyraceous part of the chyle uniting with a martial earth constitutes the *cruor*, or red particles of blood.

2. The aqueous or watery part of the chyle forms the serum.

3. The plastic part of the chyle, which is very nourishing, passes into a jellyish serum and lymph.

4. The superabounding oily parts of the chyle, which cannot unite with the martial earth, secedes into the cellular structure, and increases or restores the *adeps* or fat of the body.

5. As the chyle, besides the elementary earth, contains *fixed air*, and various salts, these easily form the constituent particles for all humors.

Fixed air is supposed a combining principle, as its disunion causes the destruction of parts. The reparation of fibres requires an apposition for supplying the destroyed earth and elementary

elementary gluten. The caseous part of the chyle gives earthy particles to the bones, and the oleaginous part of the chyle, joined with fixed air and water, forms the gluten of the fibres.

The nutritious juice, therefore, seems to be a gluten more or less impregnated with earth. For the bones, very *earthy* parts are required; for the more soft solids, scarce any *earth* is requisite.

Whether the earth and gluten of the nutritious juice cohere by the force of attraction to the hollow or lost parts, or by what other means nutrition is performed, is not at present perfectly determined by physiologists. It is, however, true that particles similar to those lost are daily supplied by nutrition, and this is most probably produced by similar particles attracting those of a similar nature; as bones earth, fat oil, lymph the gluten, serum the water, &c. *nam simile gaudet simili fortasse in corpore humano.*

Several inanimate substances, as minerals, &c. may be analysed, and their component elementary particles discovered to a certain degree, and demonstrated by chemistry: they may

may be again united or imitated by art; but animal and vegetable substances cannot. Human science can separate the compounded parts of animals and vegetables, and discover similar particles to the foods daily received; can compare and reason; but after decomposition of vegetables, flesh, membranes, muscles, bones or blood, no art can restore them to their pristine state, much less revivify or reanimate these substances. The reasonings on inanimate or animated matter, therefore, are very different, and should be always adverted to, when inferences are drawn from chemical or other experiments.

Though the minute modes by which nutrition is performed may escape ocular demonstration, or the most ingenious experiments; yet, there are certain *facts* or *data*, from which investigators in anatomy and physiology may draw very satisfactory conclusions.

Those who assert physicians can know nothing of nutrition, and other functions of the human body, or those who imagine human knowledge is perfect on these subjects, are equally deceived: the former is the language

of ignorance or indolence, the latter of infatuation or delusion.

1. The particles necessary, and abounding with nourishment, are conveyed by the arteries to all parts of the human body.

2. The *tela cellulosa* forms almost every part of the body.

3. The *tela cellulosa*, in every place, abounds with, and is composed of cells of various dimensions, some extremely minute,

4. The orifices of the capillary and minutest arteries pour out their contents, or different fluids into these cells.

5. In the membrane, called adipose, the arteries pour forth, or deposit oil into the cells of the *tela cellulosa* composing that tunic, as likewise in the interstices of muscles, and even between all the muscular fibres, in joints, &c.

6. In the pericardium and other parts, the arteries pour fourth serum, or coagulable lymph.

7. There is a continual influx and efflux of all the different parts of the blood destined for different secretions and purposes; in the liver, mucal, synovial, salivary, and other glands;

in

in the kidneys, and other secretory and excretory organs.

8. It is evident, that the fluids contained in the arteries, whether lymph, serum, crassamentum, or oil, are conveyed, deposited, or pass through all parts of the body, and that each part attracts, in health, its own particular fluid, as the fat, oil; the pericardium, coagulable lymph; the liver, particles for secreting bile; the synovia of joints, a soft lubricating fluid, like the white of an egg, &c. &c.

9. The salivary glands cannot in health secrete bile; the liver, saliva; the kidneys, synovial juice; nor the pancreas, urine, &c., hence each part attracts from the arteries the particles of blood proper for its own secretion or excretion. The structure of parts are different for these different purposes.

10. All these various parts must have, therefore, an attractive and repulsive power; each part *attracts* from the arteries its proper particles, and *repells* those which are improper. Oil is congenial for supplying the cellular adipose membrane with fat, coagulable lymph is absorbed by the lymphatics, and all the

particles indiscriminately composing blood, are received, and circulate in the returning veins. In disease, however, the adipose cells may receive serum, which, not being absorbed, constitutes the anasarcaous dropfy, &c.

11. Similar parts, therefore, attract similar, reject dissimilar; and this attraction and rejection has been called by chemistry and philosophy affinities, or elective attractions, or repulsion.

12. Anatomy, physiology, and chemistry, explain many of the foregoing facts almost beyond the possibility of doubt; nothing then, but perverseness, or a want of scientific knowledge, can deny many of the preceding propositions. If it should be asked, why these elective attractions exist? it is similar to enquiring, why a rose, lily, or hemlock, are different in their color, odor, or effects, when it is certain they all attract their nourishment from the earth, air, and water? It is sufficient for man to perceive these attractions do exist; and that the overabundance of any of the elementary principles can be often counteracted by diet or medicine.

13. The following

13. The chemical analysis of bones, muscles, membranes, or blood, demonstrate that all these parts of the body contain the same elementary particles in different proportions.

14. In bones are found most earth and gluten; in membranes and muscles more gluten and less earth; in the blood less earth and more coagulable lymph and serum; but the same particles compose the whole. In analysing flesh or bones, blood and its component parts are explained and produced: * in analysing blood, what forms the composition of muscles, membranes or bones, are found.

Simple trituration and separation, maceration, or coction of these particles, shew nearly the same.

15. In

* Formerly I made several experiments to discover the state of the blood in different fevers, small-pox, &c. both in hot climates, and various parts of Europe; which plainly indicated either the tendency or effects of those disorders. The same plan has been applied to most chronic disorders, either by analysing the blood, or the parts of the body after death. These experiments, their result, and the useful conclusions drawn from these laborious inquiries, may be hereafter published, as they tend to throw a considerable and more satisfactory light on the changes of the body under diseases.

15. In analysing the blood, or solids of human bodies in many diseases, the component parts widely differ; the particles of dropical patients are quite different to the gouty or rheumatic; the fat are dissimilar to the lean habits; the fallow and bilious, to the florid, muscular and healthful. The co-operation, likewise, of climate, diet, and pursuits, cause a diversity in the component parts of human beings, both in health and sickness.

16. The particles attracted and cohering, *pro tempore*, to the cellular structure, and in the cells of the *tela cellulosa* of each individual part of the body, must vary considerably both in health and disease. Earth, gluten, serum, oil, salts, or air, may predominate in health, according to the individual constitution. Any deviation or change from the natural or predominating principles, constitute disease, and produce sensations, first in the nerves of the parts affected, and afterwards in the mind itself, by the sympathy and communication of the nervous system.

These preceding doctrines being clearly understood, nutrition may be more easily comprehended. It is not difficult to conceive that similar

similar organic structures produce similar and uniform effects, according to the variety of influence already premised. If it should be proved, that the minutest organic structures of the body, discoverable by microscopes, be exactly correspondent to those observable by the naked eye, it is rational to suppose, that those more minute parts, not to be investigated or proved by the magnifying power of microscopes, observe the same uniform laws and connection. Examine the larger vessels or cellular structure of the body by the eye, or the most magnifying microscope, their divisions, subdivisions, actions and uses are the same; ramifications succeed ramifications; fibres, more minute, succeed the larger; cells diminish according to the laxity, solidity, or minuteness of parts; the coats of all vessels are composed of scarce any thing but minuter vessels, and these minuter vessels again of the most minute. The arteries empty themselves, or rather pour out their contents on surfaces, or into the veins, or into cells of larger or minuter magnitude; and all the cells communicate. All these things can be proved by the most incontestible evidence,

dence, and ocular demonstration; by experiments and minute anatomical injections; by macerations, inflation, and microscopical demonstrations.*

Though it may be impossible to accompany the particles subservient to nourishment, and supporting health and life, through all the minute meanders which they necessarily pass; yet, the modes of nutrition may be clearly accounted for in the following manner, from the facts already explained:

1. Particles are in a fluid state which nourish the body.
2. They are conveyed by arteries.

3. Arteries

* I have some very minute injections, of my own preparation, of parts of the human body, in which the coats of very small vessels have been injected with a colored very subtle liquor, not discernible but by the most magnifying microscopes. It is curious to examine these vessels by microscopes of a different *focus*; for the gradual progression of minute to more minute, from thence to the most minute, are easily *discovered*. Magnify these objects 100 or 2000 times, appearances are exactly the same. Some injections have passed so minutely into the minute vessels, or arteries of nerves, as to tinge the whole nerve of the color of the injected liquor. The whole membrane which invests the medullary part of the nerves, nay, all the fibres have been so completely injected, as to appear nothing scarce but arteries.

3. Arteries are always in action, receiving and propelling their contained fluids.

4. No particles received by the lacteals, conveyed by the arteries, ever remain stagnant either in the arteries, cells of the *tela cellulosa*, veins, or lymphatics.

5. The parts of the body are all daily restored by the nutritive particles of our foods being in continual and successive action; every thing is alternately received and evacuated.

6. All parts of the body, whether bones, muscles, membranes, or viscera, receive in cells of various dimensions, from the largest and adipose, to the most minute and compact, the fluids brought by the arteries.

7. The cellular texture of each part is filled with those particles that are necessary, which it attracts naturally, and which are demonstrated to be in the blood; but none of these particles remain, as they continually change their place.

8. Solidity and compactness is given to bones by a very large portion of earth and gluten, which are in continual circulation in their periosteic cells, passing and repassing from the arteries to the cells, from the cells to the veins

veins and lymphatics, by means of the external and internal periosteum, forming the osseous cells, &c.

9. In softer parts less earth is conveyed, and more gluten or oil, according to firmness or laxity.

10. All these particles of matter which compose the human body, are in continual action; the former are driven out by those which succeed: whatever particles occupied any part of the body last month, is removed to another place this month; nothing stagnates during life and health. There is no stationary attraction, cohesion and stagnation of particles in the living human body, similar to what seems to be demonstrated in inanimate substances, though I doubt whether any particles remain stationary. No particles remain, except *pro tempore*, until they are displaced by others. This change of place in the particles may be slower in the teeth bones and nails, than in the softer parts; but the active motion is perceived in the nails from small marks, wounds or bruises, which push on daily to the extremity of the nail; slow, indeed, but certain, and at last disappear.

11. The

11. The particles which are circulated in the arteries, proceed from larger to minuter, from these to the most minute. In the larger vessels the particles have less, in the minuter more, in the minutest most cohesion; but after having passed through these successive changes in the arteries, their particles are so divided and subdivided by attrition, and by passing from minute to more minute channels or cells, as to render them fit to enter the veins and lymphatics; which, being as cones reversed, and furnished with valves, easily convey and mix them with the other particles of larger veins.

12. The particles then of blood or nutrition are reduced to different dimensions, according to the magnitude of vessels they are to pass through, or the size of the cells which receive the fluids; these seem reducible almost *ad infinitum*. The chyle passes through strainers which soak it up, like a sponge, on the surface of the small intestines; but the mouths of their orifices are almost imperceptible, which clearly shews the fineness of the fluid absorbed.

This chyle passes to vessels larger, and afterward to mix with the gross blood in the veins.

From the veins to the *vena cava*, acting the part of an artery, and forcing the blood into the right auricle of the heart.

From the right auricle to its ventricle.

From the right ventricle it is propelled to the pulmonary artery.

After being forced through every part, even the most minute arteries of the lungs, and receiving changes from the *atmospheric air* in breathing, and sending off some of its noxious particles out of the habit by *expiration*, it is conveyed through the pulmonary veins to the left auricle of the heart.

From the left auricle, to the left ventricle, and from thence it is forced into the aorta, or great and principal artery.

The aorta, or great artery, dividing and subdividing into innumerable branches, passes through every individual part of the body, and by its alternate contraction and dilatation, which is, what is called the *pulse*, the blood is propelled through every part of the body, however minute, and thus supplies nutriment,

ment, causes heat and continual action, friction on the contained fluids, change of place, and at last expulsion of particles.

There are orifices of the arteries opening into the cellular structure, of which almost all the body is *demonstrated* to be composed.

In the external tunic, the cells being larger and laxer, receive oil, which, *congealing* after death, is called *fat*, for, during life, this *oil is fluid*.

After the oil is deposited in these cells, there are veins which open and receive what is either superfluous, or unfit for the fatty cells, and carry these superabounding or useless particles again by the venal system into the blood.

The orifices of arteries open on all the external surfaces of the human body, and continually transpire noxious air, and serous saline fluids.

The same happens in all the internal superficies of the stomach, intestines, and external surfaces of all the viscera; for a humid vapor and air is always transfusing by the active force and pulse of arteries.

D d 2

There

There are minute veins, likewise, both in the skin and superficies of all other parts, which receive what is not lost, and carry it into the habit again.*

There are, however, continual losses by urine, sweat, &c. and nutritive particles poured forth by the arteries into cells larger or smaller, supply these losses, drive the old particles out of the habit, and convey and deposit the new. *Air* pervades all parts, and is a very active principle, perhaps, in forcing on the fluids in conjunction with the actions of the arteries: this will be easiest conceived by those who comprehend the compressibility, elasticity, and rarefaction of air, and force of fluids; in short, *pneumatics* and *hydrostatics*.

Wherever

* The *lymphatic* is the only system which absorbs or soaks up chyle or superfluous fluids, according to the opinions of Dr. *Hunter*, and other anatomists; but this opinion is replete with error, nor do their experiments quadrate with their hasty conclusions, which I shall prove by the most indisputable experiments in another place. There are various particles in the arterial fluids which are not attracted, conveyed, or found in the lymphatic vessels; for these chiefly contain that gelatinous fluid called lymph and fixed air. The finer serum, volatile and saline particles are received by the minute sanguiferous veins. Each part attracts and circulates its particular fluid.

Wherever there is an artery, there are *two* sanguiferous and *two* lymphatic veins; the former receive the superfluous nutritive particles which compose coagulable lymph; but the latter receive the more *volatile*, serous and saline particles, and both receive a portion of air.

The sanguiferous veins all proceed from minute capillary, innumerable minute branches, to different trunks, diminishing in numbers as they increase in magnitude, and at last all terminating in one trunk, called the *vena cava*.

The lymphatic vessels, arising in a similar manner, pass through glands in their way to the *ductus thoracicus*, and are a distinct system of vessels, and, except in receiving the lymph deposited in the cellular structure, totally independent of arteries and sanguiferous veins.

These three species of vessels carrying fluids or liquids, form the vascular system of the human body, and they are all three different in their structure, actions, and uses.

The *arteries* have a pulsation, they contract and dilate, and carry a florid red blood *from* the heart to all parts.

The *sanguiferous veins* have no pulse, are double the number of the arteries, and convey a deep red blood to the heart, or rather a mixture of all the human fluids, and are furnished with valves.

The *lymphatic veins* convey no red colored blood, but pure lymph, coagulable in a certain heat, and then appearing like the white of an egg boiled ; they arise from all parts of the body, pass through glands at certain distances ; glands which belong to these vessels, and are principally formed by them, and this particularly distinguishes them from either arteries or sanguiferous veins ; they likewise have valves ; but the vessels terminate not in the *vena cava*, but in the *ductus thoracicus*, or those from the viscera in the *right subclavian vein*.

Perfect nutrition, then, is the free and uninterrupted ingress and egress of the nutritious particles from the lacteals to the *ductus thoracicus*, from this to the *vena cava*, from the *vena cava* through the right side of the heart ; from thence, through the lungs, to the left auricle and ventricle of the heart ; from thence to the *aorta*, which distributes it by arteries to all parts of the body, in every minute

minute cell, through which the nutritious fluids are continually passing; from the arteries, cells, humid superficies, to the sanguiferous and lymphatic veins, from these, again, to the subclavian veins and vena cava. The passage of the human fluids may be aptly compared to a circle, in which there is neither beginning nor termination.

Though the minute modes by which nutrition is performed, may escape ocular demonstration; yet there are certain data from which investigators, conversant in anatomy and physiology, may draw very satisfactory conclusions on the subject.

1. All the particles necessary for nourishment are conveyed by the arteries.
2. The most minute arteries certainly open their orifices, and pour out their circulating contents into the minute cells of the *tela cellulosa* of the parts last requiring reinstatement.
3. The *tela cellulosa* forms almost all parts of the body.
4. The nutritive particles being poured out into this cellular structure, they are attracted and cohere to the minute cavities, which the prior

prior dissolved or dissipated particles occupied.

5. The prior particles are attenuated, absorbed and conveyed again to the blood, to be evacuated by urine, sweat, or exhalation by the lungs, &c.

6. All the parts of the body being spongyous and porous during life, easily admit this perpetual loss and supply, influx and efflux.

7. The *coagulation* of the fluids of the minute parts prevent their being demonstrated; but, by analogy, the doctrine of their spongyous existence and use, however, appears highly probable.

The due performance of all these, and other functions, constitutes health; the non-performance or interruption, disease.

It will be easily conceived by a knowledge of the foregoing facts, how diseases may be generated, either local or universal: the former are a change or impediment in any particular part; the latter, a change of the fluids, and increased action of the moving powers of the whole body.

All

All the humors of our body, the excrements excepted, such as urine, transpirable matter, and alvine feces, are impregnated with a gelatinous fluid, or the nutritious juice, and are interposed between the fibres of all the parts: from hence, every point of the human body is perpetually furnished with the nutritious juice.

Some parts of the body, as the hair and nails, are nourished by the apposition of the nutritious juice, which is called nourishment by protrusion.

The Increase-or Growth of the Body.

By so much the nearer man is to his origin, so much the quicker he grows. An embryo, from being almost an invisible particle, in the space of nine months, increases to the weight of eight pounds.

After birth, to the age of twenty one, the increase of the body continues slower in its progress: women, however, attain their full growth sooner than men.

The causes which accelerate the growth of the embryo and infant, are:

1. The laxity and extensility of all the vessels.
2. The vessels of many parts not being as yet evoluted or expanded to their utmost limits.
3. A greater volume and strength of the heart, and a greater irritability of the heart and arteries, with a weaker resistance in the solids.
4. A quicker and stronger motion of the humors.
5. The food is soft, more copious and nutritive: from hence the abundance of gelatinous humors.
5. The extremities of the bones are cartilaginous and extensible.

The causes which determine the end of growth are :

1. The evolution of all the vessels.
2. The confirmed strength of the vessels resisting more extension.
3. The extenuation of the cartilaginous crusts are so great, that it cedes no more to the bones.
4. A grosser food, by which the nutritious juice deposits more earthy or terreous particles

cles in the interstices of the fibres; hence greater strength and rigidity of all the fibres.

5. A less increase of the heart compared to the other parts, and a diminished irritability; from hence the motion of the humors is less tardier and weaker. The difference of the infantile pulse, compared with the adult, demonstrates this doctrine.

The menses in females seem to finish the growth of the body sooner than in men.

The fixed state of growth is, when the human body neither increases, nor manifestly decreases.

After the age of thirty, a corpulency of body commences in many, which arises commonly from a diminution of the former exercises, and a more abundant deposition of the fat in the *tela cellulosa*.

The Decrease of the Body.

The causes which decrease the body in old age, are :

1. All the fibres are gradually so indurated by the nutritious terreous juice accumulating, that they become more rigid and dry: hence

gout,

gout, gravel, stone, and other chronic diseases.

2. The smaller vessels being compressed by the dilatation of the larger, they gradually concrete or collapse.

3. From many lacteal vessels being consolidated and rendered impervious, a less portion of chyle passes to the blood.

4. The humors from the diminished excretions are rendered more acrid and terrene.

5. All the natural actions which elaborate the nutritious juice are depraved.

From these reasons it plainly appears, why the body increases in youth, remains fixed in an adult, and decreases in old age.

In youth, *more* nutritive juice is interposed, or conveyed to the fibres, than is dissipated or lost; from whence the bodily growth or increase: in old age, *less* nutritive juice is carried to all parts, therefore the decrease of the body. In the vigor of age and life, as much as is lost is supplied or restored; from whence the *acme*, or height of growth is observed.

Therefore

Therefore the uses of nutrition are :

1. The preservation of our body ; which, deprived of nutriment, becomes dry, and, in a short time, perishes.
2. From the effusion of new chyle the acalefscence and putridity of the humors are prevented or tempered, which would arise from inanition.
3. The whole body is incited to action and strengthened, which languishes by abstinence from food.
4. In youth a more copious food increases the growth of the body.

*On the DEFECTS in the foregoing FUNCTIONS,
which cause Depravations of the BLOOD,
and VARIOUS DISEASES, &c. &c.*

THE preceding doctrines of the means by which the human body is nourished in health, will prepare the mind for an explanation of the depravations of all the various functions in a state of disease.

Hunger will not be excited, if the stomach be relaxed, or abounding with depraved humors, from either vitiated saliva, exhaling fluids, or mucus : these may all arise from vitiated blood.

Collections of rancid, putrid, acid, alkaline, pituitous or other matter, may injure the nerves, so as to excite or deprave their feelings in the stomach.

The sensations in the stomach may be diminished by whatever obtunds the sensibility of the cardiac nerves, as over-distention from air or wind ; from debility or compressions of the nervous trunks leading to the stomach, or

something approaching to palsy in the coats of the stomach.

If the surface of the tongue or fauces be covered with a white or brownish fur, which is a symptom of fever, the appetite will always be diminished, and capricious.

Various species of cacochymia are the causes of a disinclination for food, or a desire for absurd substances, such as chalk, brimstone, oyster shells, &c.

As a regular desire for the accustomed food, and its easy digestion, are signs of health, so a requisition for unusual things, or inappetency, are proofs of disease. Most disorders of the viscera of the stomach and intestines, except the *bulimus*, deprave the appetite.

The mind, agitated and anxious, or any violent passions, lessen the appetite.

Thirst, if excessive, denotes disease, if as usual, moderate health is commonly present.

If the secretions of saliva or mucus be obstructed, if feverish heat exist, thirst will often be insatiable. The gratification of thirst by large potations, when little solid food is received, relaxes the stomach, depraves the fluids, and weakens the solids.

Maf-

Mastication, or chewing the food, may, in certain degrees, be prevented, by various affections of the mouth, fauces, teeth, or diminished saliva: under which circumstances, the food passes into the stomach in a more solid form, requiring a longer and more difficult digestion. If the stomach be weakened, or its humors defective or depraved, digestion, with all its uses, will be perverted.

When the food is not properly reduced to a pulp in the mouth, by the powers of the teeth, jaws, &c. it should be prepared by stewing or mincing; in short, the art of cookery should supply the defect, and in this case, French modes of preparing foods are quite superior to the English. Boiling meat in the English way, on a fierce fire, in which the water is continually kept bubbling, renders the meat hard; but gently simmering it over the fire a longer time, renders it soft and more fit for digestion, particularly when mastication is defective.

In junior persons, therefore, solid meat may be more freely allowed than to senior; the former in health, digest any food, the latter with difficulty.

Deglut-

Deglutition, or swallowing, may be impeded by tumors of the mouth or fauces, ulcers, contractions, or a paralysis of the oesophagus, &c. in all which cases, spoon meats are to be preferred to solid.

Digestion may be retarded or rendered difficult by relaxation; from diminished heat; from the absence of a proper quantity of saliva, or the exhaling fluids; from an over-expansion of wind, or air extricated from the alimentary, vegetable, or leguminous substances; from the diminution of mucus, or its over-secretion.

The debility of the internal annular, and external longitudinal muscular fibres of the stomach, may diminish the muscular powers and peristaltic motion of the stomach; impeded respiration, or disorders of the dia-phragm, all sensibly affect the digestive pow-
ers. The fixed air and food are too long de-tained, not propelled; and the nutritive qual-
ties are vitiated. Bitter evacuants, dry diet,
animal food, not vegetable; chalybeates, bit-
ters, volatile cordials, and serenity of mind, in
such cases, are to be prescribed.

As to the fermentative process of digestion, its *augmentation* by vegetable, farinaceous, and leguminous substances or fruits, may blow up the stomach like a bladder, and it should be treated as the last.

The *diminution* of fermentation by copious draughts of spirituous liquors, even diluted, or large potations of strong wines, will produce an improper dissolution of the foods in the stomach, and the separation of a fluid from the solid parts of the food, quite unfit for healthful nutrition. Those who drink spirits are more difficultly cured than any ; for the tone of the stomach very often is destroyed, and beyond the recovery by medicine : all the functions, natural, vital, or animal, are changed or perverted, and the mind often inflammable, like the liquor drank.

If the habit of body be vitiated, the blood will be vitiated ; the exhaling fluid in the stomach and saliva will be vitiated, and digestion, of course, affected ; the exhaling fluids of a dropsical patient will be serous, and less tenacious or glutinous than the healthy. The particles which should be
coagulable

coagulable lymph, are watery in dropsical patients ; hence, after death, the lymphatic system is filled with ease by quicksilver, or inflation.

If heat be diminished, as in cold leucophlegmatic constitutions, the digestive powers will be slower ; for in such, the vital heat, the muscular motions, and the mental feelings all approach, more or less, to a state of torpidity.

If heat be augmented, as in the florid, robust, and active, the digestion is sooner performed ; for in these, the vital heat, the muscular motions, and mental feelings, have more force and energy.

In both instances, the diversity in human beings is infinite, and neither to be defined nor described, but easily observed in nature, by the discerning and contemplative physician. The divisions and subdivisions of the torpid and pale, the irritable and florid ; the active and inactive, are so innumerable, that inexceptionable rules cannot be delivered for their diet or treatment.

Those who most approach to the torpid must be stimulated, vicious humors must be evacuated

cuated or corrected, and the frame must be invigorated by chalybeates, tonics, &c. with more animal than vegetable food.

The florid, irritable and active require little medical attention ; perhaps gentle evacuants only are necessary, and the accustomed diet. In short, the *cold* must have warm, nourishing, animal food, and the heated should use cooling vegetables, conjointly with animal food.

Those ancient and modern philosophers, who have written on invisible agents, such as evil or good spirits acting on the human mind, might here have found ample matter for discussion, and might have discovered, from natural causes, the origin of vices and virtues. Human character depends on the state of the blood and form of body, more than has hitherto been imagined. Placidity and calmness are commonly the attendants of grossness, pallidity, and insensibility ; while impetuosity, rashness, and violence, accompany the robust, florid, and susceptible. How cold, inert, devoid of feeling, and indolent, are the dropsical ; how heated, impetuous, and impatient are the young, florid, and robust.

robust, in the true inflammatory fever? In the former, the *phlogiston* is nearly extinguished, in the latter it superabounds.

The state of the mind, which has been observed to be very dependant on the body, therefore, has a great share in promoting or retarding digestion. In contentment and good health, how chearfully digestion and all the natural functions are performed; in disease, grief, anxiety, suspense, or passions, what abundance of labor the stomach experiences in partially and badly effecting that useful office?

Air and exercise have likewise a great power in adding to, or diminishing, the red particles of blood; those who are pallid in great cities, are often florid in the country.

Digestion is therefore dependant on many circumstances, any of which being defective, the whole process is perverted, and the body, in consequence, may receive injurious, instead of salubrious juices.

If digestion be well performed, and the nutritive parts of digested aliment pass through the *pylorus* into the *duodenum*, and there meet with a well secreted bile and pa-

creatic

creatic juice, a healthful blood is the consequence ; but the reverse will happen, if these conditions be absent.

If the digesting mass be vitiated and coagulated by *strong acidity*, or *spirituous liquors* ; instead of a fine milky, gelatinous, and oily fluid, a sourish water or whey will be propelled to the duodenum. If the bile be well secreted, and should meet with such a watery or wheyish liquid, it will have no oily parts to mix with the aqueous, and thus the bile becomes useless ; or by irritating the coats of the intestines, purgings are produced, and the ends of nourishment defeated.

If no purging happen, yet this watery liquid, the companion of an ill digestion, if received into the lacteals, not having the constituent particles for replacing those daily lost in the body, the fluids will be depraved, and the solids weakened, and a variety of cachectic diseases, the consequences of vitiated fluids and debilitated solids, will follow.

Should the digestion be perfect, yet if the bile or pancreatic juice be depraved or defective, from diseases of the pancreas or liver, the oleaginous particles of food will not be

united with the lymphatic or serous; nor will the grosser parts be propelled to the larger intestines; hence costiveness, and the absorption of an insalubrious chyle; especially if the lacteals be in a lax state, and opener than usual.

When the stomach is diseased, and in a contracted or rigid state, from its muscular fibres being acted on by some morbid matter in the minute vessels, such as the terrestrial of the gout, rheumatism, &c. the food will be so long detained as to pass the second fermentation; hence sour eructations, putrid belchings, fuming heat, and the force of the distending air acting on the resisting rigid coats of the stomach, very painful sensations are the consequence.

Gouty persons very often destroy the *tone* of their stomachs by *strong liquors*, as Madeira, brandy, and other cordials, &c. these certainly give present ease, but act as future poisons. The chyle, from such digestions, is austere and unfit for nutrition; and if costiveness be added, the more gross, saline, and terrestrial parts will be absorbed by the lacteals,

lacteals, and the human fluids will be rendered highly impure.

The excrements are dry, clay-colored, and have scarce any fetid smell, which proves that impurities have been absorbed by the lacteals, productive of cacochymia.

In such instances, all remedies frequently fail; for the stomach being too much injured to co-operate with the most judicious prescriptions, the disease gradually increases, and in the end proves fatal. Medical attempts, however, should be directed to correct the prevailing acrimony, and dislodge any impacted matter collected in the coats of the stomach: this is best effected by mild cinnabarine and antimonial alteratives, or sulphureous preparations, magnesia, &c. conjointly with bitters and tonics, before dinner and supper, and an animal diet with little or no vegetables.

Healthful chyle is sweetish, and exactly similar to milk; if acids, wine, or spirits be poured on milk, the oleous and earthy parts are separated from the aqueous, and a meagre whey is produced; the same, in certain degrees, must happen to the chyle, if such liquids

liquids pass to the *duodenum*: therefore, on the profusion or paucity of such liquors, a vigorous health must depend. The inference is evident. All continued excesses of wine, spirits, punch, or acids, must prove injurious to the constitution; moderation in such indulgences, therefore, are earnestly recommended to every one who wishes to enjoy health or longevity.

The impediments to the healthful absorption of chyle are likewise to be considered. If the lacteals contract their mouths from acid or austere chyle, the absorption will be lessened, or altogether impeded. Purgings, alteratives, and simple diet are here useful.

Should the chyle be salubrious, and the lacteals pervious, and should the absorption be copious, yet if the mesenteric glands be indurated, and their serpentine or tortuous vessels obstructed; or if coagulated fluids in the *tela cellulosa* should so press on the vessels, as to prevent the free ingress and egress of the prepared chyle, nourishment may be prevented, and an *atrophy*, or wasting of the body, must be the consequence. The corpulent or fat people in health absorb much oleaginous

oleaginous chyle; the thin, slender, or meagre little: in the former the lacteals are too pervious, in the latter they are too contracted: hence moderate evacuants, and a partial abstinence, reduce the gross, while the slender often require deobstruent minerals to render the lacteals more pervious. Oleaginous foods should be sparingly used by the corpulent; but more freely by the meagre or emaciated, provided they agree with the stomach.

The villous coat of both stomach and intestines may be plastered with an adhering mucilaginous or mucous matter; this may diminish hunger, thirst, or retard digestion, and exclude the chyle from the mouths of the lacteals. In the disorder called the *thrush*, this seems to be, in some measure, the case, joined with inflammation, or a tendency to putridity. Such accumulations are best removed by borax in small doses, and bitters; aloetics and tremor tartar, the *sal sodæ*, *Aethiops vegetabilis*, alkaline and volatile salts, alteratives, &c. given with proper cautions. Farinaceous substances should be avoided, and all gelatinous or mucilaginous food.

food. When the fossile or vegetable alkaline salts are alone prescribed, it should be remembered they act, in a certain degree, as caustics ; if this be not adverted to, the remedies may prove injurious, and abrade the internal surface of the intestinal canal.

The *receptaculum chyli* and *ductus thoracicus*, may be compressed by tumors, and the passage of chyle retarded ; but as these circumstances can scarcely be known, but by dissections after death, the mentioning of them can be of little consequence ; except in accounting for bodily wasting, without apparent causes.

The retardation, however, of the lymph through the principal abdominal viscera may be of infinite consequence. If the viscera be diseased, the lymphatics may be obstructed, hence distention and rupture of these vessels. If they break or lose the power of absorption in the cellular structure, they may cause very large indurated tumors ; if they burst in cavities, incisted or other dropfies of the *ovarium*, *uterus*, *mesentery*, *omentum*, and various parts. The lymphatics, from the right side of these places, terminate in the *right subclavian vein*, without entering the *ductus thoracicus* ; which,

which, I am certain, is the case, by repeated dissections, though a new discovery.* If the blood be deprived of such a great quantity of *coagulable lymph*; it is easy to conceive its texture will soon be considerably broken down, and the foundation laid for several grievous and dangerous chronic diseases. From hence, it must appear evident, how necessary it is for physicians to prevent infarctions or accumulations in the viscera, which the present inconsiderate practice of administering preparations of lead, large doses of opium, hemlock, and other narcotic and poisonous medicines, must constantly produce.

It is then clearly demonstrable, if the chyle possess not all the constituent particles to renew the blood daily; as *oil, gluten, serum, fixed air, earth, and salts*, that sound health cannot be long preserved; how these particles

* When the late ingenious and much lamented Mr. *Magnus Falconar* was my pupil, and dissected at my house, in the years 1771 and 1772, this fact was frequently demonstrated, not only in dogs, but in the human body. Since then, other anatomists have observed the same.

particles may be vitiated or perverted by various means and mixtures, have been amply discussed.

In sanguification, or the converting chyle into blood, many requisites are necessary. Respiration in confined, or open clear air, will render the blood insalubrious or salubrious. In mephitic air, or where many animals breathe, the blood will be more prone to a dissolved putrid state, than in a fine, clear, airy situation. In great cities, in which large companies often breathe in small apartments, relaxations and nervous diseases must be the consequence. No animal can live, if the air he breathes be received repeatedly into the lungs for a few minutes: in small rooms filled with company, the same air is received into the lungs; and although it does not prove fatal, in a certain degree, it must injure, and is often productive of diseases. The free circulation, therefore, and admission of pure fresh air in all rooms where companies assemble, should be strongly inculcated.*

Feeble, diseased, or ulcerated lungs, will deprave sanguification.

* The effects of the black hole at Calcutta are well known; the air of jails, hospitals, &c. have frequently proved fatal.

As the chyle passes through the lungs and whole body above one hundred times, before it is properly converted into blood ; it is easy to conceive many impediments.

If muscular force be lessened, the vessels will contract more weakly, and the necessary attrition will be more feeble ; hence the particles of blood will be less uniformly mixed.

The oily parts will not be so easily deposited in the cells of the adipose membranes, or *tela cellulosa*. The interstices of muscular fibres, being deprived of their oil, the muscles will be more rigid, less capable of motion, and subject to rheumatic attacks, &c. and the joints to stiffness ; the red particles will not be so effectually formed, and therefore human heat will be lessened.

The lymphatics will not absorb, or receive so tenacious a coagulable lymph, hence a deprivation of the cohesive particles of the blood, and a laxer union of the fibres and parts composing the body. Stimulants, chalybeates, and corroborants, are here necessary.

The saline and volatile parts will predominate, because the arterial force does not

fend

send them off by exhalations internally, perspiration externally, nor even at times by urine ; hence the foundation of dropsies, various scorbutic and other acrimonious chronic diseases. An increased action of the vessels will often produce the contrary.

If therefore the chylous white globules do not become red, denser, heavier and smaller, *sanguification* is neither healthful nor complete.

The criterion to comprehend these various conditions, is the countenance ; but particularly the *lips* ; only recollecting, that each individual has his own peculiar color in the lips and complexion, and in proportion as appearances approach to, or secede from the usual, man is either in health or sickness, and *sanguification* is well or ill performed.

The greater elective attraction of oil produces fatness ; of earth and lymph, rigidity ; of serum, laxity and coldness. If the first superabound, the muscular powers are weakened, respiration is short, and threatens suffocation ; if the second, rheumatisms, gout, stiff joints, gravel and stone, are the consequences ; if the third superabound, all the diseases common to relaxed solids and de-

praved

prayed lax fluids may ravage in the human constitution.

The elective attraction or rejection of particular particles from the chyle are not so difficult to comprehend, as to *individually* prove; but the effects are easily perceived.

Corpulency attracts and assimilates with oil; rigidity and slenderness with earth and lymph, or gluten; the weak, pale, lax, and cold, attract serum. When either predominate, unless it be the particular constitution, health is not present: the happy medium, and a proper commixture of the whole, constitutes perfect health.

The prevention of morbid assimilations, unless in infancy, or during the growth of the body, is very difficult, perhaps impossible; afterward they can only be corrected. Persons prone to corpulency, continue so with little food; and *thin* habits very often eat much, but convey little to the constitution: so that form of body does not depend so much on the *quantity* of diet, as on some *original* and *continued elective attractions*. It is very difficult, and in many instances, impossible, to change fatness to leanness, or
leanness

leanness to corpulency, by any safe means as yet discovered; affections of the secretory organs, or the retention of the necessary excretions or evacuations, as sweat, urine, alvine feces, &c. will sensibly affect the habit, as likewise seasons of the year and climate.

It must, therefore, evidently appear, that each single individual, independent of accident, has his own peculiar digestion and attractions during digestion, chylification, &c. The three or four examples given might be divided and subdivided *ad infinitum*. It teaches medicine, however, one thing not sufficiently adverted to, that every sick patient may require, in a certain degree, a different treatment.

In *nutrition*, which is the supply of what is daily dissipated, all the particles forming the human body, are in due proportions requisite, according to the peculiar habit of each individual. Oleaginous particles, serum, crux, coagulable lymph, fixed air, martial and calcareous earth, salts, &c. are all attracted and separated from the blood, to unite with, and furnish fresh solids and fluids.

If any of these predominate, or are deficient, diseases, similar to those already observed, will be generated, and the same general modes of treatment will be necessary.

If the *attraction* and cohesive force of the earthy particles, gluten and fixed air to the bones and fibres of membranes and muscles be *defective*, debility and diminished bodily powers will follow.

Should the fluids be deprived of their component and salubrious particles, the replenishing the bodily losses by the attraction and cohesions of proper nutriment in the minute cellular structure of the *tela cellulosa* will be prevented. The destitution of nutritive blood, therefore, will produce, more less, various diseases of the solids, and deprivations of the fluids. An over-abundance of nutritive red particles will cause plethora, heat, and inflammatory fevers. Abstinence is the remedy, with proper evacuants, antiphlogistics, &c.

When the nutritive particles superabound with *serum*, which is known by paleness, languor, and debility; but particularly by *pallid lips*: the fibres of the solids cannot

attract a sufficient quantity of *gluten*, for where *gluten* does not exist, it cannot be attracted. Relaxations and dropsies are the consequence.

When the oleaginous particles much abound, the nervous powers and feelings are obtunded, and muscular actions impeded; for the interstices, not only of muscles, but even of the fibres of muscles, are loaded and too much lubricated with oil, which anatomy amply demonstrates, in fat persons.

When the coagulable lymph, earthy particles, and fixed air superabound, and are either attracted by the fibres for replenishing the particles dissipated, or circulate too copiously in the fluids, the minute branches of the arterial system will be often obstructed, distended, or ruptured. If in membranes or viscera, obstructions; if in muscles these distentions happen, rheumatism; if in the membranes or circumscribing joints, the gout is generated. This superabundance of coagulable lymph, fixed air, and earthy particles may easily be conceived to arise from keen appetite, good digestion, chylification, and sanguification in sedentary persons, or

who use not their accustomed exercizes. The perspirable matter not being forced through the arterial mouths of the skin, and evacuated, either from the *diminished force* of the arteries, or too great an accumulation of the terrene-abounding fluid, ruptures of vessels in membranes happen. The effusion of this fluid amongst the gouty, violent fits of the gout form what is called the chalkstone. The finer parts pass off by their volatility, and the remaining earth is a mere *caput mortuum*, fixing its abode about the joints, particularly in the toes, feet, or hands.* It should seem, that foods which contain less terrene and mucilaginous or glutinous particles would tend to remove the gouty accumulations; but practical experience proves the contrary; for an abstemious low diet soon destroys gouty patients, who have lived freely, and who have long had athritic complaints. Where a change can be admitted, less animal food, wine or spirits, and more exercise should be used; but costiveness, above all other things, should be prevented. It is by the long re-tention

* A variety of experiments and practical observations made several years, prove, beyond a possibility of doubt, the truth of this doctrine. See my Treatise on the Causes and Alleviation of the Gout, in the second volume.

tention of aliments and feces, that the *super-abundant terrene particles* are conveyed to the constitution.

The same particles accumulating in the vascular minute structure of the membranes of the brain, lungs, pleura, stomach or dia-phragm, constitute the gout in those parts, and prove, not unfrequently, fatal.

It should be remarked, that an abundance of coagulable lymph, or a buffy appearance in the blood, are not always signs of *true* inflammation: these particles, however, joined with a large portion of cruor or red parts, in young subjects, can produce the most violent inflammatory fevers from sudden cold, the human body being previously over-heated.*

It must be clear to every reflecting physician, that, supposing digestion, chylification, and sanguification, could, under any depraved state

* In disorders that have a strong putrid tendency, in which the combining principle, the *fixed air*, or *aërial acid*, is separated, and when the *craesis* of the blood is broke down, little or no *coagulable lymph* appears: the *crassamentum* is of a loose texture, of a blackish color, and the serum superabounds.

state of fluids, be well performed, yet nutrition being superabundant, defective, or ill-directed, from the antecedent, and various other causes, health may be impaired, or dangerous diseases produced.

The healthful *increase*, or *growth* of the body, may be augmented or impeded by all the preceding causes.

In *infancy* improper mixtures in the stomach, such as *milk* and *fruits*, *wine*, *spirits*, *tarts*, *sweet cakes*, or any other incongruous substances, given too common by nurses and parents, will sow the seeds of evils in the constitution, which no medical skill can eradicate. The *watery head* is frequently caused by giving children *vomits*, or by *tossing* them about with violence. Thousands of children, to my own knowledge, are sacrificed annually to custom, prejudice, ignorance, or an affectionate erroneous indulgence.

Through custom, fashion, and prejudice, children are suffered by some to go almost naked, in this changeable climate, when they should be clothed warm. Philosophers

phers have promulgated maxims on these subjects discordant to common sense, or common observation.

Children are rolled on the chest, when they should be loose and free, that respiration, and the actions of the thoracal and abdominal muscles may not be obstructed. They are shook and thrown about with a violence sufficient to destroy a robust adult. It is very reasonable to suppose that this jumping and shaking may affect, by concussing the brain, the *mental faculties*.

Incongruous diet, errors in clothing, violent concussions, and tossing children, all contribute to disturb the natural, animal and vital functions of infants, and render nutrition depraved or incomplete ; hence may be traced the seeds of present misery and future diseases. Simplicity in food, moderately warm clothing, very gentle exercise, and pure air, in England, are proper for children. Whoever supposes that English women, the first day after delivery, could wash themselves and children in the Thames, or sit up to receive company, at any time of the year, must be

be totally ignorant of the effects of this changeable climate. What may be done with safety in *Africa*, the *West-Indies*, or in other warm regions, as *Italy*, in summer, would here prove destructive. A child may be left in the open air all night in some countries ; but, it is imagined, no one would be so rash as to place an infant in the snow, in a wintry night, in Britain, for it would soon be frozen to death. Philosophers have advanced projects little short of freezing infants to death, to support their visionary hypotheses on nursing and education. Whimsical and inconsiderate parents have adopted some of the superficial maxims of these specious writers ; and the fatality amongst children, under two years, may be conclusively traced from a variety of the foregoing causes, joined with the ignorant and obstinate management of children, amongst the lower orders of people.

From many circumstances, then, the increase of the human body, or the elongation of its vessels and fibres, may be retarded from infancy to puberty ; hence mankind fail of growing to their proper size, or firmness.

When

When the full increase of body is obtained, violent passions, exercises, and various excesses, the concomitants of juvenility, often contribute to produce diseases or premature old age; while the reverse secures health and longevity.

Of Foods in general.

How foods and drinks are conveyed into nourishment, with the various impediments, that may arise from defects in the functions destined to nutriment, have been explained: the different sorts of foods and drinks, with their various properties are to be next considered,

Foods are of three species :

1. The vegetable.
2. The animal.
3. The condimenta.

Drinks consist of seven species :

Water.

Beer.

Wine.

Spirits,

Milk.

Sweet drinks.

Warm drinks,

By chemical analysis, and by other means, the component parts of foods and drinks are explicable: their nourishing, or other qualities, are ascertained by the different proportions found of amylaceous or starch-like substance, in leguminous foods and roots; of gelatinous in animals; of oleous in animals and various nuts; of saccharine in some vegetables; of glutinous, which abounds in grain or corn, in cheese, and various animals.

There are several ingenious writings on all these subjects, the produce of immense labor, tedious experiments, and profound enquiry, and many are mere copyists of one another; but the application, in actual life, of many systems, is surrounded, often, with difficulty. The most nourishing diet has little nourishing effects in many subjects, and the lightest nutriment is effectually nutritious in others: this proves, that neither health, strength, floridity nor pallor, corpulence nor meagreness, depend so much on the food received, as on the attraction, assimilation, and proper retention of the nutrimental particles adapted to each individual.

Twenty,

Twenty, or fifty, persons of the same family* may eat, exactly at the same time, the same food ; use exactly the same exercises, both corporeal and mental ; breathe the same air ; take the same rest or sleep ; and yet, every one appears different in countenance, in disposition, in sensations, and, in the evacuation of all the excretions, they vary in point of time : some are costive, others lax ; some have a dry, others a moist skin ; some are cheerful, others dull ; and, in short, there is no end to the varieties that may be observed.

Without entering into a minute investigation of the subject, all the antecedent circumstances must be obvious ; but, if a minuter examination were thought expedient, and the vital and animal functions were accurately studied, it would be found that no two persons perform any of the functions exactly alike, although they may pass through life as exactly as possible in the articles of diet, air, exercises, rest, &c. &c. Therefore, whether foods or drinks prove nutritious or not, must depend on the *aptitude* or *inaptitude*

* As at boarding schools.

inaptitude of the individual constitution, to receive, retain, change, and convert the aliment taken either into salubrious or insalubrious nourishment. Hence are the true sources of the natural varieties of individuals, of health, or disease; hence, from the different effects of foods in different subjects, has arisen that vulgar, though trite proverb, *What is one man's meat is another man's poison.*

It is not to be inferred, from what has been advanced, that these different statements of nutrition in different persons cause disease always; for, on the contrary, the twenty or fifty persons dieted, exercised, &c. in the same manner, though the effects of the nutriment, and other circumstances differ; yet, all may enjoy perfect health: for it should be well understood that each individual has his own peculiar state of health, called by physicians *ἴδιοσυγχετία*, or his own proper habit or constitution distinct from others. A man, therefore, may be florid, pallid, corpulent, lean, robust, or delicate, and yet enjoy the most perfect health. It is the deviation from the natural complexion and

and habit of body, that constitutes disease ; for, if the florid become, and continue, very pale, or the pallid be flushed with floridity, as happens to the hectic, then it may be considered that some disease is the cause of those changes.

The conclusions are evident with regard to diet ; for every individual, from some peculiarity in his habit, may require some peculiar variation in his diet or drinks ; therefore, every narrow *system* in diet must be futile and inapplicable to the variety observable in nature.

What may appear in the subsequent pages on diet, is to be considered in a general point of view, in which there must necessarily be many, very many, exceptions. These exceptions, it is the province of the physician to comprehend, more from the feelings and individual sensations of mankind in general, and past facts, than from any pre-conceived notions in favor of particular foods or drinks.

WHATEVER the human stomach receives as aliment for the nourishment of our bodies, is called food or nutriment.

The

The science which comprehends the doctrine of foods and drinks has been called *Bromatologia.**

The bodies that contain the constituent principles of nutriment are :

1. *Amylaceous*, or starch extracted without grinding, † from corn, or from leguminous foods, such as beans, pease, &c. and some roots, as potatoes ; for starch can be extracted from all these.

2. *Gelatinous* : as in animal food.

3. *Oily* or *oleous* : as animal and some kernels of fruits, as almonds, nuts, &c.

4. *Saccharine*, which are found in some vegetables, as sugar, sweet pease, &c.

5. *Gummous*, which exudes from some vegetables.

6. *Glutinous*, which abounds in farinaceous or cereal foods, in cheese, and in animals.

7. *Mucilaginous*, which is in some animals and vegetables.

8. *Lacteous*,

* The etymology is from *βρῶμα* cibus, and *λόγος* doctrina.

† *Amylux*, or starch, now seldom used for food ; but yet it contains the nutritious particles of wheat, rice, potatoes, &c.

8. *Lacteous*, which can be extracted from vegetables, as almonds; but the most to be preferred is the milk of animals.

Besides the nutritious principles, they contain other constituent principles, which are extricated during digestion in the stomach.

Acetous escutents, from which arise an acid, as from farinaceous or cereal foods.

Alkalescent, from which a *urinous alkali*, or ammoniacal salt, as that which arises from animal diet, as meats of all sorts, and some funguses.

Putrescent, from which putridity.

Rancecent, from acrid fats, and oleaginous substances, as butter, oil, fat, &c.

Glutinescent, from which gluten, or mucus.

Saline, from culinary salt, as what is extracted from salt meats during digestion.

Flatulent, from which a great quantity of air is extricated during digestion, particularly from beans, pease, vegetables of the cabbage kind, &c. &c.

Foods may be divided, from the kingdoms they are obtained from :

1. Into *vegetable*, which consists of vegetables.

2. Into

2. Into *animal*, which contains all animal foods.

3. Into *mixed*, consisting of a mixture of vegetable and animal food.

From the consistence of foods, they may be divided into :

Liquid foods.

Soft foods.

Hard or dry foods.

Foods, from being easy or difficult in digestion, may be classed into :

1. *Eugepta*, which are soon and easily digested, as the soft and friable, and those which are easily soluble ; such are the meat of young animals and of a middle age ; prepared farinaceous substances, tender vegetables, &c.

2. *Dyspepta*, which are difficultly, or plainly, not digested in the stomach as farinaceous hard substances ; such are the flesh or meats of old animals, crude farinaceous substances, leguminous foods, many indigestible olera, or vegetables : fish, or meats salted, smoked, or very fat. These load, and render the stomach uneasy by their weight, insolubility, and are converted into a crude

a crude *saburra*, from which many affections originate in *primis viis*, or the stomach and first intestines, &c. and from a crude *chyle* passing into the blood: many injurious changes happen in *viis secundis*, productive of grievous diseases.

From the quantity of nutritious particles contained in aliments, they may be divided into :

1. *Polycbyla*, which contain much nutritious substance; as jellies, or broths, extracted from animals.

2. *Olygocbyla*, which contain smaller portions of nutriment; as fish, greens, leguminous foods; therefore, if a great quantity of these foods be taken, it requires a strong, powerful stomach to digest them, and to convert them into nutriment.

Foods may likewise be considered from the salubrity of the chyle they produce, as likewise the probable quantity; and may admit another division into :

1. *Encbyma*, which gives a large quantity of good *chyle*; and these consist of substances merely nutritious, as milk, light animal jellies, and broths of meats.

2. Into *cacochyma*, which give a large quantity of indifferent or bad chyle; as viscid, saline, earthy, putrid, &c. which pass, mixed with the chyle, into the blood; as is usual with glutinous, acid, saline, rancid, putrid foods. Various are the diseases that originate from such foods.

The most rational mode of diet for the healthy is a mixture of vegetable and animal; that the urinous acrimony of meats should be meliorated or corrected by the acid of vegetables.

Whoever perpetually feeds on animal foods alone, acquire nitrous or ammoniacal putrid acrimony; this is proved by a manifest fetor of the mouth, in the urine, and in the milk of carnivorous animals. The scurvy and putrid disorders are frequent amongst those who live only on animal flesh.

From *vegetable food*, alone, the blood is rendered serous and pituitous, the stomach and body become weak, acids generate in the stomach, flatulency, &c.

Instinct, likewise, teaches the necessity of procuring food from animals and vegetables; and the constituent parts of the human body

are demonstrated by analyses and various experiments, to be composed of animal and vegetable particles, in different proportions. In short, the very nature of the foods mankind eat is found in the human body: from many indisputable experiments this fact has been fully proved.

Of Culinary Vessels.

The vessels for culinary purposes are either made of wood, clay, glass, or metals.

Wooden vessels are innocent, provided they be often well cleaned.

Earthy vessels, or what are called potters, or earthen ware, are :

Black, which serve to boil foods, and are innoxious: for neither by acids nor fats are they soluble.

Argillaceous, which are formed of clay, and are not injurious, except those whose internal superficies should be covered with green glazing made from litharge, or the cinders of copper and sand.

Glass resists every acid, but is not calculated for the kitchen fire; though glass

G g 2 might

might be safely used by sand heats, instead of Dutch stoves, &c.

Gold and silver vessels, if not adulterated with copper, &c. are by far the best; but their expence prevents their being in common use.

Pure tin is the sweetest for all purposes; for it is neither soluble by acids, nor wine, nor fatty substances; but some are contaminated with arsenic, lead, copper, &c. hence, if acid foods, or fats, remain long in such vessels, they may become noxious.

Copper well tinned. The tin-coating is composed of two parts of tin to one of lead.

The tin, or tinning, being rubbed off, which has scarce the thickness of a sheet of paper, the foods partake of verdigrease or rust of copper, which oftener produce vomitings, tremors, nausea, pustules, spasmodic pains of the intestines, diarrhoea, &c. &c. than is imagined.

Iron pots or vessels tinned. Iron is an innoxious metal; hence, if the tinning be worn off, no injury to the human body is the consequence, even if a little should be dissolved by any acid that may be mixed in

the foods; but they tinge some foods of a blackish color, rendering them hard and not so agreeable to the sight, though not injurious to health.

Iron pots or kettles lined with zinc. Pure zinc has neither the impurities of adulterated tin nor copper; but is perfectly salubrious for culinary purposes: the iron vessels, therefore, when covered with zinc, are the most excellent.

Brass, which is made of copper and zinc, or tin, as also white copper, which contains arsenic, are very noxious and dangerous.

The mineral taste of spoons made with brass, &c. which is impressed on the surface of the tongue, when eating broths, shew clearly how insalubrious brass must be when used for culinary purposes.

In this country all manufactures flourish, and we have kitchen and all other furniture of the best construction and materials, and superior to the whole world. Our commerce supplies some articles, but our industry more; we supply most countries with iron, tin, &c.

The English tin furniture is various, plentiful, cheap, and excellent for all purposes.

The

The coppers are well tinned with what is called *pure grain tin*.

The earthen ware and china, both foreign and English; the Staffordshire ware of Mr. Wedgwood, and many other stone wares, are in universal use, and justly esteemed amongst all ranks of people, for cleanliness, sweetness, and salubrity.

The ware likewise made at Chelsea, called the *brown stone ware*, is the sweetest, and least objectionable of any used; but for reasons I have never been able to ascertain, they are disapproved of by the cooks.*

On Vegetable Foods.

The vegetables used in diet consist of seven general heads, which admit of many divisions and subdivisions.

1. The *cereal*, or different sorts of corn.
2. The *leguminous*.
3. *Greens* of various sorts called *olera*.
4. *Fungusses*, as mushrooms, &c.
5. *Sallads*, or *acetaria*.
6. *Fruits*.
7. *Succedaneous vegetable esculents*.

* In the King's Road at *Hempels*, the same clayey substance makes crucibles, &c. &c. which no acid affects,

Vegetables from the farinaceous seeds, corn, or grains, of which bread and other foods are commonly prepared, are called *cereal*.

These contain two principles of nourishment; one *amylaceous*, or starch-like, which acetates, and is solvable in warm water; the other, *glutinous*, which alcalesces, becomes putrid, and, in warm water, is not soluble.

The *amylaceous* principle is decomposed by distillation into oil and acid. The *glutinous* is resolved into volatile alkali and animal gluten. This principle is found in *wheat* in great quantities.*

There are usually three modes of preparing *wheat*.

1. The entire grain broke and rubbed by the means of a mill into grits, which may be boiled with water, with milk, or animal broths.

2. *Starch*, which is made from wheat, by mastication, without grinding, affords a very nourishing

* From whence is discovered the constituent principles of *chyle* and *milk*. The *cream* from oleous particles, the *sacchariferous serum* from the vegetable, and *cheese* originates from *gluten* and the volatile alkali of cereal.

nourishing food; but is used chiefly as hair powder, when ground fine.

3. The grain, by means of a grinding mill, is reduced into fine flower; from which, by the addition of water, yeast, &c. are made various farinaceous foods, as cakes, bread, &c. these are eaten with meat, broths, milk, or butter.

Their Virtues and Use.

Cereal and farinaceous, foods well prepared, are very nutritious, particularly wheat; they are easily digested, and by their light mucilage they obtund acrimony in the stomach, and their acid resists putrefaction: from hence, to the healthful, or those who are not much debilitated, they afford a most apt nutriment. Bread, however, well fermented, is much easier digested than cakes, or other farinaceous preparations not fermented.

The abuse, or improper use of farinaceous foods, especially if not fermented, nor well baked, generates a glutinous acid, saburra or foulness; from whence, a sensation of weight in the stomach, inappetency, worms, appoplexy

plexy from distention of the stomach, &c., wasting of the body, paleness, and a tendency to dropsies, hectic pituitous fevers, obstructed viscera, and abundance of diseases.*

The species of corn or grain are many, as:

Wheat, which is more nutritious and less acescent than any other grain; but capable of generating viscid juices, if eaten in too great quantities.

Wheat flour boiled with milk, is a common nutriment for new-born infants in many places; but, from its glutinosity, it is apt to plaster the internal surface of the stomach and whole intestinal canal; by which the lacteal system is obstructed, wastings of the body,

* *Van Swieten* has observed, that some boys who had eaten ripe wheat were taken very ill, with great swelling of the abdomen, or belly, with which they long languished, and at last two of them died of the dropsey; the rest were saved by purges, from whom was expelled a putrid glutinous *saburra*. Comment. T. iv. p. 108.

Galen relates something similar, and all experienced physicians know that foul bowels in children are frequently owing to improper farinaceous food, which requires frequently smart purging to remove.

body, rickets, swelled belly, and death, are often the consequence.

Rye is nourishing, invigilating, more acef-
cent than wheat, but less constipating. A very
salubrious bread may be made of wheat and
rye flour mixed.

Barley nourishes less than wheat or rye, it
cools, and is said to increase the semen. It
makes excellent drink, when boiled in water,
for the sick labouring under inflammatory
diseases, and is sufficiently nutritious.

Rice is very nourishing, drying and consti-
pating, but a most salubrious and grateful
aliment.

In Turkey, and the Eastern countries, it is
eaten boiled in water, to which some add
milk, and is the principal food used; but it
should be remarked, that the inhabitants, by
their religious laws, in general abstain from
wine, &c.

The *Mabometans* prepare rice in a va-
por bath, and add salt and saffron, which
they call *pilau*, and which is their daily
food.

Oats and oatmeal are less nourishing, but
more cooling than wheat, therefore are made
into

into gruel, which affords a light and proper diet for the sick, particularly in inflammatory diseases. Bread made of oatmeal is brownish, bitterish, and difficult of digestion.

Millet is nutritious, but rather constipating; its bread is difficult of digestion, but is in use in Lombardy, and other places.

There are various sorts of millet. In England millet is chiefly used to make puddings with milk and eggs.

Indian corn is nutritious, but not in use in England.

Sago, *simolina* and *tapioca* are all light nutriments, and used in general for the sick in various diseases, where light diet is necessary; and in all fevers, where animal food should be generally avoided.

There are many other species of food, such as *Polygonum tartaricum*, *sagopyrum*, *spelta*, *holcus sorghum*, *semen mannae*, or *manna Polonica*, which last is eaten in Poland, Prussia, Lusatia, which is a small oblong grain, of a reddish cast, sweeter and softer than millet, and makes a grateful food with milk, but produces costiveness, &c. All these

these are seldom used, and little known in England, which abounds with plenty of corn, superior, in general, to most other countries.

Of Bread.

A farinaceous mass, or dough, baked by heat in an oven, is called bread.

The most useful and best bread is made of fine wheat flour, or wheat and rye; all the rest are less nutritious, when compared to *wheaten bread*.

In London, and in many parts of England, scarce any other bread is eaten except loaves made of wheat flour, or wheat and rye.

Various sorts of loaves and cakes are made of wheat flour, as when united with milk, eggs, sugar, spices, butter, raisins, &c. but the bread most common in use is made by the ferment from *yeast*, flour and water: in countries where ale is not brewed, *leaven* is used in the place of *yeast*.

There are two principal sorts of bread; soft bread, common in domestic use, and biscuit

cuit bread, which is made for sea voyages, and in common use among mariners at sea.

Biscuits, from their attracting much saliva in chewing, and, afterwards, absorbing the gastric juice in the stomach, are easily digested: they are extremely useful for our navy and commerce, as they may be preserved in long voyages.*

From the finest wheat flour is made macaroni, vermicelli, &c. as they are called in Italy, which is universally eaten, either boiled in water, or in meat broths, and affords excellent nourishment.

The

* In the West-Indies, however, I have seen biscuits served to the ship's company, both before and after the siege of the Savannah, in 1762, full of an insect called *weevils*, which were so numerous in the biscuit, as to make them appear like a seed-cake.

This *biscuit*, almost like touchwood, and full of holes, was obliged to be soaked in water and toasted, when thousands of the *weevils* would come out. It happened at the latter end of the war, when the stores at Jamaica afforded no better biscuit for nourishing our sailors. Though it was very disagreeable, for the taste of the weevil can only be compared to the smell of a bug, yet I do not remember that any sickness was the consequence of this hard fare, which, sometimes, in our voyages in that fiery hot climate was united to a scarcity of water.

*The ill Qualities of Bread under certain
Conditions.*

Bread composed of wheat flour made from pure grain, well fermented, properly salted, without adulteration, and well baked, is a most salubrious food; but it should not be too new, should be well dried, porous, tender, sapid, and easily deliquescent in the mouth; otherwise it may be productive of many disorders.

1. *Hot bread* well buttered is considered by many delicious, but it renders the teeth soft and loose, and is difficultly digested; from hence arises a diminished appetite, a debility of the stomach, flatulency, thirst, hysterics in women, and chlorosis amongst girls.

2. *Bread too soft and spongy* inflates and debilitates the stomach; from whence persons, subject to purgings commonly by such food, have a return of the disease; it also renders the gums spongy. The crust is easier of digestion than the crumb.

3. *Bread old or stale* strengthens the stomach; and, although it may occasion costiveness

tiveness when moderately stale and dry, yet it is easily digested; but if it be so hard and dry as scarcely to be masticated, it is with difficulty digested.

4. *Bread too much burnt in baking, from its proximity to coal, or, as we say, burnt to a coal, cannot prove nutritious.*

5. *Bread too moist, from its spongy softness, does not absorb the gastric humors; from hence it is most difficult of digestion, and produces the same effects as bread too soft.*

6. *Bread not well fermented, from the gluten, or dough, not being well attenuated, generates viscosity in the stomach, and creates costiveness; from whence arise many evils in the habit. Fermentation renders bread porous, light, and it attenuates the gluten; but bread not well fermented, collapses and remains a long time in the stomach, in the form of a heavy lumpish mass.*

7. *Bread not well baked, or as it is called, slack baked, is too humid, doughy, and retains the nature of flour. Crude flour is not easily digested, but forms a glutinous adhering paste.*

8. *Bread*

8. *Bread too acid*, which the lower classes, or all the middling people, in many parts of Germany eat, is productive of carious and impure teeth, which is not observed in countries where such bread is not eaten. *Rye bread*, from its acidity, causes inflations in the stomach, hypochondriac disorders, heartburn, &c.

9. *Bread not properly salted* is insipid, and not easily digested.

10. *Bread too mucous*, made chiefly of bran, is seldom eaten by the human species, except in great dearth or scarcity: it is unwholesome, and has a septic or putrid tendency.

11. *Worm-eaten bread* excites nausea, although the insects have no poisonous quality.

12. *Gritty bread*, when the millstones, by rubbing in grinding, mix some of their gritty sand with the flour; this causes a stridor of the teeth.*

13. *Bread made from unripe corn, and from corrupt corn*: these occasion epidemic diseases, as hath been observed in the former part

* I remember eating such bread at Belliste, after its capture in 1761.

part of the work on nervous diseases, under the title of the *cereal convulsion*, &c.

15. *Poisonous bread*, from the mixture of *Bromus secalinus* or *loliū temulentum*, *Lathyrus cicera*, *Ervus Ervilia*, *secalus cornutus*, &c. but none of these mixtures ever happen in England.

16. *Bread adulterated* by our bakers, with alum and other things, in order, generally, to make a mixed flour hold together, or for other secret purposes, may do some mischief, but more to infants than to adults; therefore, we prefer *biscuit viands* for children to the common household bread.

Wheaten Bread,

Is bread prepared from white flour. There are five sorts of farine, or flour from wheat.

1. *Farina filiginea tritici*, *Siliginous flour*, or first wheat flour, which is the finest and whitest part of the finest and best grain, separated from the other parts. This contains the most nutritious part of the wheat in the smallest compass, and makes the finest bread, and affords the best nourishment.

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H h

2. *Farina*

2. *Farina similaginea*, *similaginous flour*, or the second flour, which is likewise a fine flour, not so white as the former, but nutritious.

3. *Farina cibalis*, or fine flour, with some of the bran.

4. *Farina confusanea*, or the grain ground and all its parts united; that is, bran, meal, &c. This makes military bread in armies, and is sweat and nutritious, if the grain be good.

5. *Farina furfuracea*, or bran and a little meal, which is only used in times of great scarcity, and is the least nourishing of all.

Wheaten bread, if good, and not adulterated, is easily soluble in the stomach, and changeable into a fluid analogous to milk, very nourishing, and slightly constipating. Two pounds of good bread is sufficient for a day; numbers eat not half so much.

Panada, made of fine bread and beef-tea, or animal broths without fat, is a most excellent nourishment for persons in a convalescent state, or for the debilitated, and when the stomach cannot easily digest solid meats.

Pap,

Pap, made of unadulterated bread, or biscuit powder and milk, with water, is a food proper for children; though, if beef-tea be added, instead of water, it is much more nutritious, and less acidulous.

Toasted bread, infused in water, makes a proper drink in fevers of the inflammatory kind.

Panada, made of bread and water, is the only food necessary in those fevers; but, in the putrid-tending fevers, wine or spirits should be added to the panada, &c.

Bread soaked in wine, after being toasted, with ginger, nutmeg, or cinnamon, powdered, is an excellent food in fevers of the putrid class; and, likewise, when the stomach is very weak, &c.

Jelly, made from crust of bread, with a small quantity of the yolk of eggs and milk, is a very nourishing food for infants.

Rye Bread.

Rye bread has more taste than the wheaten, is dark-colored, soon dries, does not create costiveness, and is detergent, flatulent, but

H h 2 nutritious,

nutritious, and is the greatest part of the food amongst the lower classes of people in many countries.

Rye bread and water is the only food condemned criminals are allowed in many foreign prisons.

There are as many species of rye flour as wheaten ; and every one is less nourishing than its antecedent, as may be observed in the species of wheat flour.

On Leguminous Foods.

Leguminous foods are farinaceous seeds, as *pease, beans, lentils, &c.* of various species; but boiled beans and peas are most used green, in the summer time, [amongst the English.

Virtues.

They nourish by an amylaceous principle; but they are more flatulent than the farinaceous foods, more difficult of digestion, and frequently occasion cholics, great flatulency, and distention of the stomach and bowels. In debilitated stomachs they do not digest; hence they are only proper for

persons whose digestive faculties are strong. *Leguminous foods* should be avoided by the sedentary, by persons labouring under ruptures, or who have the heart-burn, or any complaint of the stomach and intestines.

They are usually but lightly boiled in England, and eaten with butter, salt, pepper, &c. which is the worst way of preparing them; in France they are stewed in gravy, &c. with pepper, salt, &c. which is the best way of dressing leguminous food; butter or cream are likewise added, which renders them more nutritious, and less flatulent: but however they may be prepared, they are liable to create great flatulency, and are highly improper whenever they disagree.

They are eaten with ham or bacon, which fumated meats are harder of digestion than the pease, &c. and therefore improper for all delicate stomachs, and debilitated habits.

On Greens and Roots of various Species, called Olera.

Greens and roots are esculent vegetables, which, after boiling in water, or stewing, are

are eaten with animal foods, or meats of various sorts.

The esculent vegetables are divided into roots, leaves or greens, *turiones &c. &c. discors &c.* and green leguminous foods.

Virtues.

They nourish by a gummosus, amylaceous, or saccharine principle, but much less than farinaceous and dried leguminous foods ; and, although they seem tender when boiled, yet they are very flatulent, and much more difficult in digestion than animal substances or meats. They give an aqueous aliment, which refrigerates and diminishes transpiration and *venereal stimulus* ; by their saponaceous power they open the intestines, and, in many, prevent costiveness ; they resolve visceral obstructions, and cure the scurvy, particularly that species which arises from long voyages, salted provisions, sea air, and the long absence from breathing on land, which may be

be not improperly called breathing and receiving vegetable life.*

Vegetables of these species, therefore, agree with the atrabilious, costive, and scorbutic; but disagree with the nervous, and all whose stomachs are delicate in sensibility, and debilitated.

Their Uses.

They are boiled in water, and afterwards eaten with butter, and generally seasoned with pepper; or they are stewed in gravy extracted from animal substances; or they are boiled tender, and afterward united with cream.

Amongst roots, are turneps, potatoes, parsnips, carrots, beet-root, &c. &c. Amongst the greens are asparagus, cauliflower, cabbages, spinach, &c. &c.

Amongst roots the least exceptionable, and most nutritious, are potatoes, which are universally eaten with meat all through England and Ireland; turneps and parsnips are less nutritious.

* I have every reason to conclude, that the scorbatics are as much assisted in their cure by breathing on land, as by eating vegetables, fresh meats, &c.

Amongst the green vegetables, asparagus, green peas and beans, are most in esteem ; the former is less flatulent than the latter, but less nutritious : cauliflowers are nutritious ; cabbages of different sorts afford more nutriment than spinach, and are less flatulent ; artichokes are fit for the sedentary.

There are great varieties of both roots and greens, but they are all more or less flatulent, and yet, under certain limitations, are useful in many instances : wherever they agree, they may be safely used in moderation ; whenever they disagree, and disorder the stomach or intestines, they should be avoided.

On Fungusses.

Soft vegetables, destitute of leaves and flowers, such as truffles, mushrooms, &c. are called *fungi*, or fungusses.

They are furnished with a powerful smell and taste.

Their constituent principles are, *gluten*, with abundance of *volatile alkaline salt*, easily putrifying ; they contain much water ; scarce one eighth part of fungusses is solid,

They

They have a nourishing virtue, and have a delicate, grateful taste. The Tartars in Russia, who profess the Greek church religion, on their fast days, eat nothing but *fungi*, and yet have a robust body ; but they do not agree with a weak stomach. Various species of the agarick, truffles, mushrooms, &c, are evacuated without digestion.

They are apt to tumefy the stomach, especially of the delicate in constitution, and debilitated; from whence *anxiety*, *heart-burn*, *cholics*, *biccups*. Sometimes they have been retained three or four days undigested in the stomach, occasioning the most violent pains and misery ; then they putrify, and, besides the other symptoms, they induce the *Gastritis*, or inflammation of the stomach, diarrhoea, and mortification, which often end fatally.

Therefore, although *fungi* are allowed to be delicacies, and are admitted into many exquisite made dishes, yet it should be remembered, that they are *dangerous delicacies*, and if they be used, their *juices* should only be extracted, and their *solid parts*, which are as tough as leather, should be thrown away,

and

and never introduced into savory dishes, nor swallowed. Many have lost their lives by eating *stewd truffles*, *mushrooms*, &c. and many stomach and intestinal complaints have succeeded the eating of *truffles*, *morilles*, *mushrooms*, *champignons*, &c. &c. of a dangerous nature. A learned, and very industrious author, expresses himself in the undermentioned manner on the *fungi*; and he finishes his sentiments by exhibiting a collection of above fifty species of the *fungi*: to well distinguish which requires no small *botanical skill*; but as the people, who collect many of the *fungi* for culinary purposes, are *very ignorant*, and as it is to their interest to make what advantage their necessitous circumstances urge, it is not surprising, that very fatal errors in the selection happen, partly from ignorance, and partly from poverty and low avarice. I have known many instances of the most *poisonous fungi* sold for *mushrooms*; it is therefore necessary to give some short rules for knowing the real from the spurious.

The under side, or that part of the *mushroom*, called the *beard*, should be of a dark deep red tinge, if large, or a deep brown;

if

if small, they should have a pink color, not only the edge, but all through the bearded part. Descriptions, however expressed, cannot give so adequate an idea, as demonstration, in the fields.

As so many genera and species of *fungi* are poisonous, the esculent *fungi*, or those fit to eat, should be accurately distinguished from the venomous. The distinguishing marks of bad, are the following:

Fungi should not be eaten that are furnished with,

1. *Stipite cavo*, or hollow stalk.
2. *Odore tetro & sapore acri urente*, or a distinguishing odor, an acrid and burning taste.
3. *Qui sibi relieti cito in liquamen putridum defluunt, aut cocti valde indurantur*; or which liquify into a putrid liquor, or when boiled, grow very hard.

The sorts are :

Lycopædra, to the number of four, called *truffles*.

Agarici, another species growing on trees, to the number of thirty seven.

Elvelæ

• *Elvelæ phalli*, to the number of thirteen, called *morilles*.
• *Boleti*, to the number of nine, called by the French *potirons*.

The ancients knew the use of *fungi*, as Juvenal shews ;—*Vilibus anticipites fungi ponentur amicis, boletus domino.* Juv. 5, 147.

Upon the whole, great caution should be observed in the use of *fungi*, and if they be introduced to heighten the flavor of made, or other dishes, their savory part should be only extracted, and their substance excluded : but where there is so much hazard with such little profit, prudence would dictate the total exclusion of all these *fungi*, that are not well understood ; and only call in use, if absolutely necessary, those that are known ; such as the true innoxious *agaricus campestris*, or *field mushroom* ; *agaricus deliciosus*, *truffles*, &c. but, in other respects, it is better to avoid these *Epicurean delicacies* altogether, than to gratify the stomach at the hazard of life.

Of Acetaria, or Sallads.

Esculent vegetables which are eaten raw, with vinegar, oil, and salt, are called sallads, or *acetaria*.

Tender leaves, that are smooth and succulent, destitute of any ungrateful taste, are used as salads.

Virtues.

Sallads are saponaceous, detergent, refrigerent or cooling, and antiseptic ; opening and diuretic ; and, from the addition of vinegar, they become a grateful stimulant for the stomach.

From hence they excite appetite ; correct an atrabilious, alcaline, putrid, scorbutic diathesis ; they liberate the tongue, stomach, intestines and kidneys from sordes ; they cool the blood in summer, and resolve obstructions of the liver and other viscera.

They agree with the sedentary, scorbutic, bilious, fanguineous ; the heated, especially in hot climates, or in the summer heat ; provided they do not disorder the stomach by their slow digestion, or flatulency.

They are improper and injurious to the cold, debilitated, and nervous, and all those who have acidity in the stomach, or inert bile.

They

They are divided into the more bland and acrid, as various sorts of lettuces, endive, cichory, *sedum reflexum*, &c. purslain, small fallads, growers from mustard, and other feeds, cucumbers, beet-root, nastertium, radish, and horse raddish, small, and other onions, which are proper additions to fallads, basil, &c. &c.

The best way of preparing them is by uniting the oil, vinegar, salt, and a little water, by the yolks of eggs, and pouring this mixture over the cut fallad.

As to *cucumbers*, they are best prepared by being cut very thin in slices, or minced, with an addition of oil, vinegar, black or cayan pepper, and salt : but they are to many very choleric and indigestible, producing acute pains in the stomach and intestines ; and if not carried off by oily eccoprotics or purges, they sometimes are attended with dangerous and fatal consequences.

When cucumbers are in great plenty, fluxes, and other stomach and intestinal disorders most abound.

On

On Fruits.

Fruits are of various species and qualities, which are here generally mentioned ; from which may be inferred the virtues of many others.

The Virtues of Fruits.

Fruits nourish by a saccharine and mucilaginous principle. They solve humors by their saponaceous qualities; they lubricate and moisten the solids, by their eccoprotic powers ; they absterge the stomach, &c. and act on the urinary passages. They resist the putrid tendency of the humors and bile, by their abounding with fixed air ; by their acidulous taste they quench thirst, moderate heat, and refrigerate. They agree most with summer heat, and in hot climates they most abound. In the warmer regions of Europe, in the East and West Indies, acid, and other fruits are in great abundance, and of the most excellent quality : in the colder climates, and as we advance more and more to the North, the production of fruits diminish ; they lose their

their original delicious taste, and their degeneracy is evident to the most common observer. What an immense plenty of *oranges*, *lemons*, &c. are imported to this country from *Spain* and *Portugal*; but, with what difficulty orange-trees are preserved in this country, every one, but little conversant in gardening, must know. The great Author of the creation has distributed blessings with the greatest wisdom: for, where the acid and cooling fruits are most necessary, there, by the industry of man, they most abound, and are in the greatest perfection; where they are least necessary, there they cannot spontaneously grow.

This very circumstance points out their utility, not only as part of our foods, but as remedies in all diseases that have a putrid tendency, fevers, &c. Fevers of the worst species most abound in the hottest climates.

The Uses of Fruits.

In hot countries they cool, and in all countries they are most useful to the robust, heated bilious constitutions; to the costive and

and those who have visceral obstructions, the melancholic and scorbutic.

The Abuse of Fruits.

They cause flatulency, violent pains in the stomach and intestines, purgings ; they suppress transpiration, and produce, in some, intermittent fevers. Unripe fruits, if eaten freely, occasion diseases of the abdomen, infarctions of the glands of the viscera, and scabby eruptions.

Fruits are divided, in respect of their taste, into the *acid-dulceous*, the *aqueo-dulceous*, the astringent, and the oily.

The *acid fruits* are the citron, lemon, oranges, berberry, acid or morella cherries, gooseberries, tamarinds, cassia, some apples, &c. &c.

The *sweet acid fruits* are the pine apple, the sweet orange, peaches, apricot, some species of sweet apples, pears, various plumbs, cherries, strawberries, raspberries, mulberries, grapes, elder-berries, hips, &c.

The *sweet watery fruits* are the melon of various species, such as the water melon,

black canteloupe, &c. figs, dactyls, pomegranates, black gooseberries, alpine gooseberries, some grapes, &c. &c.

The oleous fruits are almonds, philberts, nuts, walnuts, pistachia nuts, chesnuts.

The *odor* of nuts is weak, or scarce perceptible; the taste sweetish and mild.

Nuts consist of two parts, the one is *oil*, the other is called *bland*.

Sweet almonds are very nourishing; by the means of hot or boiling water their brown skin is separated from the medulla of the nut, and they should never be eaten without this separation, for the skin of almonds, and all other nuts, irritate the fauces, and occasion coughs or hoarsenesses.

The Use of Nuts.

Nuts of various sorts are eaten recent or dried. Nuts toasted have been substituted for coffee. From blanched or decorticated almonds, with sugar and rose water, a smooth paste is prepared, which, being mixed with water, makes the *orgeat* of the confectioners. If it be made with rose water it is a most delicious

licious drink. Almonds enter the composition of bread, cakes, &c. and they are eaten saccharated. Various are the uses of almonds in the delicate cookery of the kitchen, and various emulsions are made from this nut, as drinks for the sick, &c.

The Abuse of Nuts, &c.

If almonds, philberts, or other nuts, be eaten either recent or dried, unless they be well chewed, and used in moderation, they disagree with many stomachs, where the bland part will long remain indigestible, occasioning flatulency, violent pain, gripes, hysterics to females, and vomitings and purgings amongst children.

Various are the species of nuts; but the most preferable are the almond and pistachia; then follow philberts, hazel-nuts, walnuts, chesnuts, cocoa nuts, very indigestible, and an abundance of others, all possessing various portions of oil and bland.

Nuts should be eaten with a little salt, as many do walnuts, and the mouth and fauces should be well washed after their use. After

fish, nuts; after meat, cheese; is a precept of the *Schola Salernitana*.

The oleaginous parts of nuts obtund acrimony, and render the fluids milder: emulsions or oil of almonds, and other oils, are useful in urinary obstructions, or in inflammations of the kidneys. Too free a use of nut oils relax the whole habit.

Cocoa nut, or *Theobroma cocoa*, is the nut that, when toasted, makes chocolate; which will hereafter be considered.

Scarce and Exotic Fruits.

Scarce and exotic fruits are, in general, the pine apple, banana, musa, annona, mangostana, and a multiplicity of others; but, as they are rare, and not the produce of Europe, except by great art, and as their qualities are well known by the experience of the countries where they most abound, to that experience is it best to refer the inquisitive, or to those books which treat expressly on exotics. Most fruits are reducible to the specimens already exhibited, and may be classed under those heads, according to their form,

form, taste, and other qualities. As to the pine apple, I have known the most violent stomach and intestinal complaints follow their use in the West-Indies, which has arisen from the sharp spiculæ, or pointed little substances in the skin of this delicious fruit; therefore, when the pine apple be eaten, it should be carefully pared, and all those little spiculæ, with their cells, should be carefully removed.

Of Vegetables used as Substitutes for better Foods, in Times of Scarcity, &c.

These are the *scirpus maritimus*, *bromus se-calinus*, *avena fatua*, *lolium*, *lupinus*, *triticum repens*, *lapathum acutum*, and many others, which are used in some countries through necessity, as succedaneums for corn, and others in the place of pot-herbs, greens, &c. as *lilium camschatcense*, *arisarum*, *dioscorea sativa*, *cyperus*, *papyrus*, *primula veris*, *campanula*, &c. &c.

The discovery of the uses of numerous articles, besides those mentioned, does honor to the industry of man; but to dwell on their separate

separate qualities is not necessary in this work. It is sufficient to know, that, besides the foods in common use, *necessitas, mater inventionis*, has discovered a variety of vegetables on which man can subsist, and that, in times of great scarcity, they may be sought for and produced.

On esculent Animals, or animal Foods.

Foods taken from the animal kingdom are nominated animal foods.

Animal Foods nourish by their gelatinous, glutinous, oily or oleous, or mucous principles. These principles are more or less impregnated with an alkaline, or ammoniacal salt. *One pound* of animal food, in general, contains little more than *one ounce* of nutritious substance.*

The Uses of animal Food.

The flesh of animals contains a juice similar to our humors; for the jelly that is in the fibres of veal, or flesh of the calf, differs very

* *Comment. Academ. Regiae Parisianæ, anno 1730 & 1732.*

very little from the coagulable lymph of the human body, and the *fat* scarcely differs from the human *fat*, or *adipose substance*. Animal food, therefore, is more easily digested, nourishes more, and strengthens the human body much more than vegetable foods. The requisite consistence of the human blood, from which all other humors take their origin, is preserved by animal food; and *carnivorous*, or flesh-eating animals, are much more *robust* than *herbivorous*, or herb-eating animals. *Strength* depends on the tenacity of the gluten of the muscular and other fibres, and a greater quantity of the red particles of blood. Animal diet profits much to those in health who use laborious exercises, or to those who are exhausted by too much labor, or previous disease, or to those laboring under a pituitous or serous state of the blood, or who abound with *acids*.

The Abuse of animal Food.

Animal food, if not taken in moderation, proves injurious to all florid persons of a full habit, or what are called the plethoric, by increasing
the

the cruor, or red parts of the blood, where those particles already superabound. In true inflammatory disorders, and in fevers, animal food is objectional for the same reason, and because it is supposed they accelerate the pulse by an alcaline, saline stimulus:*

In *putrid disorders*, and in scorbutic, they injure by increasing the alcaline putrid *fa- burra*: hence they increase the putrefactive tendency. Urinous salt much abounds in meats; animal food, therefore, if long continued, without vegetable acescents, renders the humors putrid-tending fetid; from hence, the breath, sweat, and urine of carnivorous animals have a fetid smell. From too much animal food arises many evils, as itchings, scabby eruptions, putrid-tending fevers, and even hectic,† scurvy, and from a dissolved state of the humors, purgings or fluxes, haemorrhages, and evacuations through all the emunctories.

* *Ja. Haller* Element. physiolog. T. 8. pars 11. p. 44, says, Ego mihi video in repetitis exemplis videre homines, qui multo caseo, & finapi, & carnibus, & alio putredinoso victu se sustentarunt, cum specie habitus athletici, vix posse letho eripi, si febris acuta acceperit, quales homines sobrii & victum sequentes vegetabilem facilius superant.

† Haller. T. 6. p. 211.

emunctories. *Putrid meats* produce nausea, vomiting, purgings, and putrid fevers.

All diseases arising from a superabundance of animal food are cured by vegetables, &c.

There are many differences and varieties of animal foods, with regard to taste, hardness, and culinary preparation, &c.

1. *With respect to habit.* Meat moderately fat affords much more nutriment than the lean, and the meat is more tender. The flesh of *castrated* animals is soft, fat, and delicate; many of the non-castrated, hard and nauseous. What a great difference is there between good well-fed ox beef, and bull beef, &c.?

2. *With regard to age.* The meat of old animals is hard, tenaceous, dry, and difficult of digestion: the flesh of younger animals soft, tender, and humid, and easy of digestion.

3. *Time of copulation.* Quadrupeds at this time have a strong scent, and their meat at such times are unfit for table.

With regard to the feed of animals. The flesh of *herbivorous*, or herb-eating animals, is mild and sweet; but the meat of carnivo-

rous

rous animals is acrid, strong, urinous and easily putrifying. *Piscivorous*, or the fish-eating animals, are rancid, earthy, insalubrious.

5. *Climate.* In some climates the food of animals is very tender and delicate; yet the same animal in other regions shall be hard, indegestible, disagreeable, and less nutritious. I have seen the finest sheep of England carried to the West-Indies; but before our arrival even at Barbadoes, the wool has fallen off, and the animal has been covered with hair like a goat; the meat, from being in England fat, tender and nutritious, has become, by the intense heat of the climate, lean, hard, almost tasteless, and devoid of good nutrition.

6. *Times and seasons of the year.* *Turdus*, or the thrush, in the summer, when he eats flies, and various insects, is insipid; in autumn, when he feeds on grapes and berries, he has most delicate tender flesh. Many wild fowl, feeding on fish, are disgusting; yet, in frosty weather, when they cannot attain their usual food of fish, they become excellent and delicate food. Wild ducks, of

certain species, may be numbered in this class.

Lastly; in respect of the modes of dressing or preparing animal foods, there is a great diversity, as to taste, hardness, &c. &c.

1. *Meat.* Tender meats are put into cold water, and placed over the fire until they boil; thus the cruelty is removed, and much gelatinous juice is extracted in the water. This is what is called beef-tea, if from beef, or veal-tea, if from veal.

2. *Meat boiled.* The gentle boiling of meat, for a length of time, softens the more hard meats, and draws out more of the jelly-like substance.

3. *Meat roasted.* Without any other means than the fire and spit, or if, what is called dangling, a yarn, or other string be used, meat is dressed; it is called roasting. The fire so opens the pores, and heats the fleshy fibres and gelatinous substance contained in meats, that the fibres are softened in their own gelatinous juice, and oleaginous parts interspersed between muscles or lean parts, and all their fibres. In this manner the meats of younger animals and of wild fowl are deprived

prived of too much humidity, and thus are rendered more agreeable in taste, and tender.

4. *Meat fried.* When meats are put into a frying-pan, with butter, and dressed over the fire, they are called fried meats.

5. *Salted meats.* Meats are preserved from putridity by salting; and, from the humidity being extracted by salt, meats are rendered more sapid. Meats recently salted are easily digested, tender, and salubrious, if not too long continued: but, meats long kept in salt, from their hardness and incipient putridity, are insalubrious, and cause scurvy to sailors, &c.

6. *Meats soaked in vinegar.* This is a German fashion, by which the more hard meats are rendered tender; the tender meats are more salubrious and better tasted.

7. *Meats smoked.* By smoking, meats are rendered drier, higher tasted, and preserved from putridity. If they be, however, too long smoked and kept, from their hardness, they can scarcely be digested in the stomach; hence crudities, inappetency, and cacochymia;

cacochymia ; and they supply but little, and that a bad depraved chyle.

8. *Meats dried in the air.* These are very hard, insipid, and the most difficult of digestion.

9. *Made dishes, stews, ragouts, &c. &c.* If meats lightly boiled, be gently stewed over a slow fire a long time, with various additions, they are called made dishes, stews, ragouts, &c. Of these sorts there are innumerable dishes of various meats, fish, vegetables, &c. in use; but the most common are :

1. *Buttered, or with cream,* which are prepared by being stewed in liquefied butter, &c.

2. *Acid;* if to the former, vinegar or juice of lemons, &c. be added.

3. *Sanguineous;* if animal blood or gravy be added to the former.

4. *Sweet;* if sugar or honey be mixed.

5. *Herbaceous;* If the made dish be prepared with parsley, garlic, onions, leeks, chalottes, &c.

6. *Aromatic;* if pepper, mace, cardamoms, allspice, cloves, or cinnamon, nutmegs, &c. be added.

In a variety of dishes of this nature the French excel: their books of cookery may, therefore, be consulted, as *Le Cuisinier Royal*, *Dictionnaire de Cuisine*, &c.

There are barbarous, uncivilised nations who eat fresh raw meat, and others, who eat putrid meats. Crude, undressed meats, to those unaccustomed to them, occasion nausea, inappetency, &c. but, the putrid meats, nausea, vomiting, purgings, and putrid fevers. Meats from mad or leprous animals occasion delirium, or leprosy.

There are six classes of animals :

The mammalia, or those that give suck to their young, by being furnished with breasts, dugs, or paps.

Birds.

Fish.

Amphibious animals.

Insects, and

Worms.

The *cicura*, or tame animals, afford succulent meats, gelatinous, and fat, which are easily digested; from whence they are very salubrious and nourishing. The broths and soups of the domestic quadrupeds, as the ox,

spasid

calf

calf and sheep, are savory and gelatinous, and have become our common foods.

Amongst these animals, the ox affords beef, the calf veal, the sheep mutton, the lamb ~~house~~ or grass lamb, the deer venison, the hog pork, &c. &c.

These are most common in use; but, in some countries, and in scarcity, the people eat camels, dogs, cats, horses, asses, &c.

On Beef.

The animals producing beef are the bull, the cow, which are the male and female of this species, and the ox, which is the male castrated, and affords the best beef, for which Great Britain is very famous.

To the sixth month the bull and cow are called calves, and to the second year, heifers.

The Virtues.

Ox beef is tender, gelatinous, full of juice, and easily digestible in the stomach of the healthful, robust, and hearty eaters: from hence

hence many live on this meat daily, as it is very nutritious, salubrious, and strengthening. The meat of the old bull or ox, rendered tenacious, emaciated, hard, and dry by labor, is difficult of digestion, and creates gross and insalubrious humors.

The Use.

Beef is frequently eaten boiled simply, made into what are called *soup* and *bouillé*; or it is roasted, fried, or broiled in stakes, or stewed, chiefly in its own vapor, with some culinary additions. It is likewise eaten salted and smoked; or, after being soaked in vinegar; which last is seldom practised in England.

Besides the flesh of the ox, called beef, the following parts are received as food, more or less, in different countries,

1. The tongue, called *neat's tongue*, and is a very excellent food either stewed, salted, or smoaked, when gently simmered and dressed tender.
2. The heart, kidneys, and liver, are firm, and only fit for strong stomachs.
3. The

3. The *lungs* and *spleen*, called, vulgarly, *lights*, and *milt*; from their spongy fabric, are difficult of digestion, and not very nutritious.

4. The *stomach* cut into pieces, and prepared by the tripeman, is called *tripe*, which is more difficultly digested than the meat, and less nutritious.

5. The *brain*, which is soft and easy of digestion.

6. The *marrow* and *suet*, of which we make puddings, by mixing it with flour, milk, eggs, and raisins, currants, &c. will be hereafter considered.

The specimens of the parts of the ox may be applied to the parts of most other domestic animals.

The *bull* is not castrated. Its meat is hard, dry, and difficult of digestion, and from its odor, and disagreeable taste, by many people it is abhorred.

The Use.

The Spaniards are fond of this meat, worried by dogs, or after the bull-fight. This sort of cruel death renders the flesh softer and more tender, and it more easily putrifies.*

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K k

Cow

* Labat's *voyages*, vol. 1, p. 377.

Cow beef is drier than ox, inferior in taste, less gelatinous and fat, and more difficult of digestion: therefore, for sick people, cow beef, unless young, is not proper.

The udder of the cow, salted and boiled, is thought by some rather a delicacy; but, from its density and toughness, is difficult of digestion.

Veal.

Veal is the meat of a calf not exceeding six months old.

Veal, from its most mild fat, intermixed with its fleshy fibres, is of a pleasant taste, more tender, and easier of digestion than beef; and from the mucidity of its gelatinous parts, affords a lighter nutriment. *Calves*, however, not two months old, are mucid and almost insipid.

The Use of Veal.

Veal, either roasted, boiled, or stewed, is most salubrious and tender meat, and agrees with the healthy or convalescents, and all who require a light nutritious diet. The calves

calves head, dressed various ways, is accounted an excellent dish; the brain and tongue are a pleasant part of the head, mixed with sage or aromatics, &c. as well as the heart and kidneys, liver, &c. The calves feet afford a very glutinous food, and make jellies for various purposes. They are sometimes baked in milk, and used as light salubrious nourishment to the sick; they are likewise good stewed, and eaten with parsley and butter, &c.

The *buffalo* is eaten by the *Tartars*, and neighbouring nations in *Padolia*, *Muscovy*, *Hungary*, &c. the meat, preserved by being salted, &c. is considered by some as a delicacy. There are other species eaten in Italy, as the *bos cornubus resupinatis*, *intortis*, *antice planis*. L.

On Sheep.

Sheep, the meat of which is called mutton, which, in our country, is excellent in quality, and is eaten almost by all ranks. It affords, when not too old, excellent nourishment, and of which are made a variety of

dishes; but the leg, loin, shoulder and neck, are parts in the most esteem, and are roasted or boiled, except the loin, which last is generally roasted, or eaten in stakes with potatoes, &c. &c. in ragouts, &c.

Lamb. The meat of lambs is tender, gelatinous, sweet and nourishing, especially the spring grass lamb, which abounds in great perfection through many parts of England.

The goat, kid, &c. are seldom eaten in England; but the kid is inferior to lamb.

The Hog, the Meat of which is called Pork.

Pork is a strong meat, and depends much on the food of the hog, &c. as to its quality; but hog flesh contains a strong fat, very apt to rise in all delicate stomachs; for which reason it is more proper for the robust and strong stomachs, than for the weak and delicate.

The free use of pork produces unwieldiness in body, nausea, inappetency; and its acrimonious rancid fat causes leprosy, the scrophula, scurvies, and other impurities.

Its Uses.

Pork is eaten by almost all countries, except Jews and Mahometans, who are forbiddend by their religion to eat swine's flesh.

Pork is eaten after being boiled, roasted, fried, salted, smoked and perfumed.

Salted pork is tender and sapid, but if it remain too long in the pickle, it becomes hard, rancid, putrescent, and unsalutary.

Smoked Pork is more salubrious than the perfumed ; but both bacon and ham are hard of digestion to many stomachs. It is thought by some, that smoking attenuates the tenacity, diminishes the fat, and excites the stomach to digestion : from hence, numbers eat those relishing foods ; but I am inclined to think, more from following the inclinations of a depraved appetite, than from any principles of salubrious nutrition.

Sausages, black puddings, &c; &c. are pleasing to the palate, but apt to turn rancid on the stomach. The most delicate sausage meat in England, or, perhaps, in the world, is made at Oxford, composed of veal, pork, and sweet herbs. This delicate food is well known

known to all Oxonians, and does high honor to the taste of the inventors, as well as the consumers of that article, which is sent for from many parts of England.

Pig is delicious eating, if the sow be fed with milk and corn; it is gelatinous and nutritious, but sometimes purgative.

As to the camel, the dog, the horse, and the ass, although eaten in some countries as dainties, yet, in ours, they are never used.

Of wild Animals of the mammalous Species.

Mammula fera, or wild animals, that are exercised more than the domestic, and likewise eat a more acrid food, have meat drier, more tender, more rapid, and easier of digestion, than the tame domestic animals: but, from a less quantity of gluten, and more of fat, the flesh of such animals is not fit for broths or soups. From their copious transpiration of urinary or ammoniacal salts, they promote perspiration, and are useful in diseases arising from acidities. But if they be copiously eaten and long continued, they excite nausea, putrid eructations, thirst, and generate

generate putrid diseases, more than the meat of domestic tame animals.

Amongst these are the *wild boar*, the *hart*, or *stag*, *deer*, &c. the *wild goat*, the *bare*, the *rabbit*, which last is a light and nutritious dry food.

The *hare*. The older the hare, the less nourishment it affords. If hare be eaten copiously, it oppresses the stomach, and impedes sleep. It should be remembered, that if the hare be shot, as likewise all game whatever, and if the leaden shot should be in the flesh and swallowed in eating, that violent complaints may be generated: for, by the acid in the stomach, the shot may easily be converted into a *saccharum saturni*, or sugar of lead, the effects of which are highly deleterious. In this country, hares are roasted with stuffing in the belly, composed of sweet herbs, pepper, salt, eggs, and suet, to which is added gravy.

Hares are best under two years of age, after three years of age, they are hard and insalubrious; but are then best if jugged with wine, spices, &c.

Venison, which is the meat of the deer, I need not mention, as it is considered an excellent

cellent food amongst all the lovers of good eating; its best part is the *baunch*.

The squirrel, the young wild ass, the badger, the wild rat, mouse, castor, &c. all of which, in different countries, are eaten, and some of their parts considered by the Epicures delicacies.

The marine mammalous Animals.

The marine mammalous animals, as the *sea calf*, the *sea bear*, the *sea lion*, the *sea cow*, the *porpus*, *whale*, the *dolphin*, &c. are foods seldom eaten, their muscular flesh in general is hard, their fat very rancid; but, in Norway, Greenland, and other maritime places, they are usually eaten. Train oil, stinking train oil, is the delight of the *Laplanders*, and they prefer it to olive oil; therefore, *de gustibus non disputandum*.

Birds.

The classes of birds in use as food, are usually divided into the *granivorous*, which feed on grain; *insectivorous*, or who live on insects;

insects; and the *piscivorous*, or those who feed on fish.

The *granivorous* are the *cock* and *hen*, *chicken*, *pullet*, *capon*, which last is the *cock* castrated; the *India* or *Guinea fowl*, the *peacock*, the *partridge*, *pheasant*, the *goose*, the *pigeon*, and an endless number of others.

The flesh of granivorous, or grain-eating birds, are more delicate than that of domestic quadrupeds, and are considered easier of digestion; but this depends on the mode of dressing. They are not so nutritious, therefore, more proper for the weak and debilitated, who cannot eat butcher's meat; from hence, poultry or fowls agree with the sickly, sedentary, and convalescent; but they do not suffice for the robust and laborious.

Those are most delicious, and lay easiest on the stomach, whose flesh is whitest, such as the *cock*, *hen*, *chicken*, &c. *turkey*, &c. those stronger, that have a brownish flesh, as the *duck*, &c. *pigeon*, &c. are strong rank food.

The domestic Cock, &c.

The masculine is called *cock*, the female *hen*, and both, from the time of their being hatched,

hatched, to seven or eight weeks, *pullets*. A cock castrated in the third month is called a *capon*; but the hen is, under the same circumstances, called *pullarda*.

The Virtues.

The meat of the young cock, well fed, is easy of digestion, sapid, making much chyle; but the flesh of an old cock, who has often exercised venery, is hard, dry, and more difficult of digestion. The coxcombs and testes of young cocks are much estimated by some of the judges of good living. The flesh of the capon is more fat, tender and delicate, and easier of digestion than the non-castrated cock or hen.

Uses.

Capons, and younger fowls, both cock and hen, are eaten roasted or boiled. The older are rendered softer by long stewing, and afford very nutritious broths; for they contain and afford six parts of gelatinous substance, when thus prepared.

The

The Hen.

The meat is delicate and tender, if young, and better than that of the cock ; from hence, owing to its tenderness, it has been received, in every age, as a most salubrious aliment. A *hen*, however, which is old, and who has long laid eggs, is hard and difficult of digestion, and fit only to make broth or soup, or, by long stewing, a ragout. The broth is fit for the sick, and the well prepared ragout for all who are fond of those dishes.

The flesh of a castrated *hen*, or *pullarda*, where the ovaria are dissected out, is more delicate than the capon. It is chimerical to say, as some have done, that it is productive of the gout. Its use is the same as the preceding.

Chickens of some weeks old are delicate, and very proper for those who may be debilitated by diseases, or who have been exhausted from any other causes. To the delicate in constitution and healthful they are best roasted ; but, for the sick, they are best boiled, or stewed simply with a small addition of lemon juice.

They

They likewise make a delicate food for the convalescent, whose stomachs are delicate, called *chicken panada*, which is the white part of the chicken beaten to a pulp after scalding and skinning, and adding either a little of its liquor, or, what is better, beef, or veal tea. This is a very restorative food, when the stomach can scarce bear solid meats, and is proper for the gouty invalids and valetudinarians.

The turkey is similar, according to its age and feed.

The duck, goose, and pigeon, are only fit for healthy, strong persons, and whose digestive faculties are not to be disturbed by strong meats, nor rancid gross fats.

The ortolan, partridge, pheasant, and many others, are delicate foods, and, if young, easy of digestion.

All other birds who eat grain, may be considered in the foregoing point of view.*

Insectivorous

* Such are psittacus, alauda arvensis, alauda pratensis, alauda arborea, and various other species; fringilla, the chafinch; turdus, the thrush, &c. &c. which birds all eat grain.

Insectivorous Birds.

The flesh of the insect-eating or insectivorous birds, is not so mild and sweet as the granivorous, but more acrid, urinous, or alkalaceous: from hence, proper for those who abound with acid in the stomach, but highly improper where there is the least putrid tendency, as they promote putridity. Such are the woodcocks, which are tender and of a good taste in autumn, and considered amongst most persons a delicacy.

The snipe, plover, the lapwing or bastard plover, titmouse, lark, the swallow, and many more, are devourers of insects.

On Piscivorous Birds.

Piscivorous birds, or those who eat fish, a few excepted, are hard, crude, subrancid, and difficult of digestion, of a strong smell and taste generally fishy, unless it be very frosty weather.

The seat of this rancid taste is in the subcutaneous tela cellulosa: from hence, in some places these birds are stripped of this
acrid

acid covering, then they are soaked in vinegar, and larded. In our country, the wild ducks of various species are roasted, stuffed with sage and onion, &c. but such food, however relishing, is only fit for very strong stomachs.

The soland, or wild goose, the pelican, the swan, mergus, and an endless variety of birds that live on fish, are commonly objectionable, on that account their fishy taste rendering them disgusting except to particular palates.

Of Fish.

Fish are usually divided by the places they inhabit, as the fluviatile, the lake or pond fish, the sea fish, and the amphibious, which dwell on land and in water.

Fluviatile, or *river fish*, which live in rivers, are so much the better in proportion to the velocity with which the river runs; of these, amongst others, may be mentioned the salmon, lamprey, trout, eel, perch, flounder, gudgeon, roach, &c. &c. Amongst these the salmon and trout are most esteemed

by the healthy, but the flounder, greg, and eel boiled, are most proper for the sickly and delicate.

Pond or lake fish, which keep in or near muddy parts. These fish are fat, but lax and mucid; and, from their muddy taste and smell, ungrateful, and not very salubrious. In ponds or lakes where the water has a strong motion, these fish are better than where the water always remains in a stagnated state. Some of these fish are the following: carp, tench, &c. which, stewed with wine, &c. are considered dainties.

Sea fish, who inhabit the sea. Most sea fish, with some exceptions, are either hard, and difficult of digestion, or watery, and they do not afford much nourishment. Amongst these, the best are cod, mackarel, haddock, skate, whiting, turbot, brille, soals, herrings, sprats, sardinia, gurnet, John a Doery, &c. this last is the delight of Epicures, and they come hundreds of miles to eat them in perfection.

The *sea fish* salted is a common food, especially the large Newfoundland cod, the tuisk, &c. which come from the North of Scotland.

These

These afford but light, though, to many, grateful nourishment, especially when eaten with eggs, parsnips, or potatoes, which is the practice in England: but if salted fish be much eaten, it produces scorbutic eruptions, the itch, and other very troublesome and uncleanly disorders.

Amphibious Animals.

There are some of these animals that are received into daily food; as the turtle of different species, the frog, the crocodile, the iguana, viper, &c. and the boa constrictor.

With regard to the *turtle*, it would be useless to say much, as it is received by all the lovers of good eating, as delicate and rich food: but, having myself, when in the West Indies the war before last, frequently partook of the turtle feasts, I must observe, that in their voyage to Europe, they lose much of their excellent taste and nutritive qualities. Turtle broth is said to cure the scurvy and *venereal disease*; but I do not remember any facts of this nature either at Jamaica, the other islands, or at the Havanna, when

when in our possession in 1762, and, therefore, consider such stories fabulous in the last mentioned disease.

A *fricasee*, or ragout of frogs, is considered by the French excellent; but the English pay tolerably dear for their curiosity, when they order this dish at the hotels, as I myself have experienced.

Insects and creeping Animals.

From this disagreeable class of animals food is received into use; and some even eat the grasshopper, spider and scorpion.* Insects agree with the putredinous nature of some fish.

Crabs of the river or sea kind, the *lobster*, &c. the softer parts of which are highly nutritious; but the harder parts, as the tail and claws, are hard of digestion.

Locusts are eaten by the Arabians, Syrians, and Egyptians, or the thighs of that insect boiled and buttered. At Mecca, the powder of locusts dried in the sun, is eaten, made into a pulp with water, instead of bread.

Of

* Haller, Element. Physiolog. T. v. p. 205.

Of Worms.

Amongst this class some are used for aliment, as the *snail*, which some stew with vinegar; *snails* are made into broth in some places, and given to cure the consumption.

The *oyster* is delicious, though common food in London; is eaten alive, and considered very nutritious for the emaciated or debilitated; but if it disagree with the stomach, it cannot be useful.

If the *oyster* be stewed or boiled, it hardens, and is difficult of digestion.

In London we have great plenty of different sorts of oysters, amongst which many are excellent.

Muscles are harder of digestion than oysters, and, perhaps, the *cockle* still harder of digestion than the muscle. These are chiefly eaten, owing to their cheapness, by the inferior classes of people in London, where they are brought daily, during the season, many months, in great abundance.

Muscles sometimes have poisonous qualities, and occasion nausea, vomitings, bloated swellings of the whole body, erysipelas, &c. and

and have proved fatal. The antidote is vinegar, pepper, or juice of lemons, &c.

There are many other shell fish of this class, some of which are exceedingly hard, when boiled, very difficult of digestion, and I have seen many instances amongst the sailors in the navy, in hot climates, where these hard foods have produced terrible diseases of the stomach and intestines.

The dactylus, cardium edule, echinus esculentus, sæpia officinalis, media sæpiola, sæpia octopodia, polpo of the Italians, &c. are all of the above species.

The small river crab, as dressed and eaten at *Rome*, in the month of August, is a most delicious food; indeed, I scarce remember eating any thing more delicate in any part of Italy.

Of Condiments, or Condimenta.

Substances added to meat or drinks, which give a grateful smell or taste, are called condiments. Some of these are destitute of nutritious powers; but, by their grateful stimulus, they contribute to an easier digestion

of foods, they strengthen the stomach, and preserve foods from corruption, or they come into the use of the table as assistants to foods: of these are the saline, acid, sweet, fatty, milky, gelatinous, aromatic, extraordinary narcotic.

Of saline Condiments.

Saline condiments are those that give meat a saltish taste, and are the culinary or fountain salt, the sal gem, the marine salt, and nitre or salt petre.

Common table salt, &c. are salts composed of fixed mineral alcali, and the acid of salt.

The Virtues of the culinary and Table common Salts.

They afford an agreeable taste to meats, bread, &c. for it is not improperly said, that *salt seasons all things*. By attenuating the mucous and gelatinous parts of meats, they promote the resolution and digestion of foods in the stomach, by their saline stimulus on the nerves, they increase the action of

the stomach, and promote the excretions of urine and the excrements; they are, in many instances, a vermifuge, or preventers or destroyers of worms. From these qualities, salt has not been improperly called by the antients *aroma aromatum*: for, without salt, meat is almost tasteless, and indegestible. The want of this article can best determine its utility, which, during the American war, the Americans suffered severely, at times, from its scarcity. Salt resists the putridity of meats and fish, if in one ounce of water are contained fifteen grains; but a less quantity, or proportion of the salt promotes putridity.

Use of Salt.

It is added almost to all sorts of foods, meats, fish, garden stuff, or vegetables, salads, and broths, to render their taste pleasant and relishing, as well as for the purposes already mentioned.

The Abuse of Salt.

When it be used too freely, it generates a muriatic, salt, or saline acrimony in the body;

body; from whence scurvy, dissolution of humors, acridity, slow fever, thirst, itchings, reddish or liver-coloured eruptions, putrid ulcers, loose teeth, foul gums, stinking breath, and a contraction of the muscles and ligaments.*

Saltpetre, or *nitre*, is a salt compounded of the vegetable fixed *alcali*, and the acid of nitre. It is used chiefly to afford a red color to meats, such as hams, tongues, pork, hung beef, &c. and all fumated meats. A very small quantity answers this purpose; but, if used in too large a quantity, it is apt to render the meat hard. Nothing shews the penetrating quality of this salt more than the small portion it takes to redden a large joint of meat thoroughly. The medical qualities of nitre are well known in all true inflammatory disorders, and, lately, its noxious qualities in all disorders that have a putrid tendency.†

Caviar,

* This from my own experience, as well as that of most authors who have observed naval diseases, &c. See *Philosophical Transactions*, 1665, p. 138, &c.

† See the causes of the great number of deaths in putrid fevers, the scarlet fever, and putrid sore throat, &c. in the small family pamphlet on those subjects.

Caviar, garum, sardinias, herrings, salted meats fumated and perfumed, have all more or less salt in them ; and, if eaten too freely, produce all the disorders common to a saline acrimony.

Acid Condiments.

The acid condiments are, wine vinegar, beer vinegar, omphacium, or the juice of immature grapes, or verjuice, and the juice of citrons, lemons, chaddocks, limes, &c.

The Virtues of Acids of this Nature.

They are antiseptic, or resist putrefaction, antibilious, promote perspiration, and afford a grateful taste to many foods.

Their Uses.

Meats and fish condited or soaked in these acids become more tender, and are preserved from putridity. The alcalescent qualities of ferocious animals and game are corrected by vinegar, &c. and the crudities of herbs in fallads are mitigated.

Wine vinegar comes from the fermentation of wine ; common beer vinegar, from the fermentation of small beer, &c. the former is the strongest.

The medicinal Powers of these vegetable Acids.

They are useful in putrid, bilious, verminous and scorbutic diseases; vinegar and water promote perspiration and resist putrefaction, quench thirst, and impede the generation of fat; but I have known dangerous consequences to arise, where young ladies, subject to corpulency, have drank vinegar to keep themselves more slender; dropsies and consumptions, jaundice, and other dangerous diseases, have been produced by such imprudence. These acids are not proper for the calculous, arthritics, phthisicky, hysterical, the chlorotic, asthmatic, nor for infants: their immoderate use induces an *acid faburra*, inert bile, and an acid cachexy.

Of sweet Condiments.

Sweet condiments are sugar, honey, mustum, &c. &c.

Sugar is the essential salt of the sugar cane, Its taste is very sweet, and it is compounded of its own proper oil, and an acid,

Its

Its Virtues.

Sugar, when moderately used, is nutritious, relaxing, saponaceous or deterging, gently opening to some; it is an antiscorbutic, anthelmintic, and antiseptic.

Its Use.

It is the most frequent article used in preserving and dulcifying various foods. Fruits are preserved by sugar, and various pastry, puddings, cakes, &c. &c. admit it as an ingredient, and, being a pleasant addition, it has generally received the approbation of all ranks.

Its noxious Qualities.

Sugar, when used too freely, from its latent, and strong acid, is apt to blacken and destroy the teeth, and some think it inimical even to the bones; I am certain it often is the cause of rickets in children; for the nurses are apt to over-sugar all *infantile foods*, causing the most injurious acidities in the stomachs of children; and, as saccharine particles can easily be conveyed by the lacteal system, it may carry its acid effects into the constitution,

constitution, and produce the same, or similar effects, that are observed in the teeth of great sugar devourers. It creates flatulency in the stomach, acidity, and what is called the *heartburn*, relaxes the firm parts, solves the humors, and irritates the nerves, therefore, should be avoided, or very moderately used by the nervous and irritable, who have commonly a prevailing acidity in the stomach. Sugar is inimical to the chlorotic, hysterical, hypochondriacal, and particularly to infants and children subject to the rickets; in this last disorder it is not only the *cause* of the disease, but often the *increaser* of that softness, sponginess, and enlargement of the joints of the wrists, ankles, &c. Those, who wish to prevent those diseases in their offspring, should never suffer children even to taste sugar in their foods.

Honey is in many respects similar to sugar, and contains a very pungent acid, occasioning heartburn, &c.

Musum is similar to sugar and honey.

Of

Of pingueous Condiments.

Pingueous condiments, are olive, almond and linseed oils, &c. marrow suet, fats of meat, as hog's lard, &c.

These condiments are in various use; without oil or butter, some say, all meats are insipid. These fat substances lubricate foods, so that they are easier swallowed. They afford great nourishment, and incline certain subjects, where the oils are much attracted and retained, to corpulency. In many stomachs, *fat* cannot be digested, but constantly rises with a rancid eructation, in which cases it is scarce necessary to say they are improper.

The Abuse of fat, or oily Substances.

They relax the stomach, and whole body; and produce fatness and obstructions in the viscera, rancidity in the stomach and intestines, inflammations, herpetic eruptions, ulcers, gangrene, caries, and even cancers.* Rancid and soon corrupt is the fat of animals, especially of fish; from hence it causes, when freely

* Gaubii institut. pathol. editio secunda, p. 320.

freely used, heartburn, colic, scurvy, ardent fevers, and leprosy. The emaciation in fevers is owing to the dissolution and destruction of the fat of the human body.

In our regions are frequently in use cream, butter, lard, suet; in Italy and the meridional countries, olive oil; in colder countries, the oils or fat of fish. Oily and fat substances are preserved by boiling and mixing with salt, &c.

By so much the more recent and soft are fatty substances, so much the less they are injurious; when cold, less than heated, they injure: they are commonly used with foods, as butter and oil with bread, or mixed to make crusts for pies. Warm draughts of liquids extricate the fat; cold drinks refrigerate fats, and retain them longer in the stomach; from hence the latter injure more than the former. It is, however, prudent to use all greasy or fat substances with great moderation; for they are difficult of digestion, and produce a rancid oil disturbing digestion.*

The lacteous condiments are, creams, butter, whey, buttermilk, curds, cream cheese,

or

* Haller.

or the second sort of cheese, made of the curd after the cream is removed, which is the common cheese.

Cream, butter, whey, or buttermilk, when used in moderation, are not injurious, unless they disagree with the stomach. Cheeses of all sorts are not very easy of digestion; but the cream cheese is the easiest, and others in proportion as they contain various portions of the creamy or oily particles of the milk. If cheese be old and rancid, it should be very sparingly used: it is commonly taken after dinner, in small portions, and, in strong stomachs, not injurious; but cheese, though relishing, is not a proper food for weak, delicate stomachs. We have in England great plenty of cheese, and it makes a great part of the food of the lower orders of people, whose stomachs are strong in proportion to their strength of body, and the labours they undergo. These stomachs digest, with little or no disturbance, any sort of food.

Gelatinous Condiments.

They are preparations mostly extracted from the gelatinous parts of animals, or *farinaceous*

sinaceous substances. These are, jellies of various sorts, as of hartshorn, veal, ifinglass, jelly of starch, white and yolks of eggs, blood of animals, &c. &c.

If jellies be used when thick, unless diluted by drinks, they become a tenacious *gluten* in the stomach, they may blunt the sensation of hunger, but are not in such a state convertible into a chyle fit to be absorbed or received by the *minute lacteal vessels*. If jellies, however, be diluted by water, or water and milk, they afford light and strengthening nutriment, and are, therefore, useful for the exhausted and debilitated, taken in small portions, and often. The yolk of an egg, or the yolk and white beaten up with a little sugar, and then gradually adding half a pint of water, to which may be added powdered cinnamon, grated nutmeg, or, instead of these, simple cinnamon water, and common water, equal parts, may be added instead of the half pint of water.

These gelatinous foods are improper for the robust and healthy, as they produce plethora, and all the dangerous evils of fulness, which great meat-eaters are subject to: it

may

may be remarked, that the yolk of eggs is stronger, and more indigestible food, if hardened by boiling, than the white when beaten with water, &c. and the white of an egg is least nutritious and most indigestible when boiled hard.

Eggs are used for various purposes ; and, on the whole, when they do not disagree with the stomach, and are mixed with farinaceous substances in the forms of sweet biscuits, puddings, &c. they afford additional nutriment to flour, &c. but, if used too freely, they create putrid crudities, nausea, nidorous eructations ; from hence *eggs*, and all *animal foods*, are improper, and noxious to persons in fevers.

Eggs boiled, fried, or poached, if hard, are indigestible ; stale eggs, that have become putrid, are very injurious, and eggs should always be examined before they be mixed for puddings, cakes, &c. or they may do mischief.

Of aromatic Condiments.

Aromatic condiments are vegetables of a grateful odor or taste, and give a taste to foods,

foods, so that they are rendered more palatable and desirable. They afford little or no nutriment, but strengthen the stomach, excite the appetite, so much so indeed, that some are induced by relishing, dishes, to eat much more than is necessary for the natural wants, or for the mere preservation of health and strength. These condiments are generally stomachics, counteract flatulency, stimulate the stomach, promote urine, &c. and correct the noxious qualities of various foods.

Amongst these, are garlic, onions, leeks, eschalots, sage, rosemary, thyme, basil, marjoram, carraway, lemon and orange peel, cummin, fennel, dill, mustard, laurel leaves, juniper berries, parsley, capers, horseraddish, saffron, nutmeg, cinnamon, mace, cloves, ginger, allspice, peppers of various sorts, &c. the uses of which in culinary preparations are well known.

The *moderate use* of these aromatic condiments are not objectionable, especially to those who have been long accustomed to their taste and utility.

The

The *immoderate use* of such heating substances is productive of heat, fever, nausea, heartburn, irritations of the stomach and intestines, &c. and many chronic disorders. Those species that are most pungent, acrid and heating, are most to be avoided. It shews a sign of good health, when persons eat without any *desire of sauce*: for the old proverb is certainly true; that a *good stomach requires no sauce*. Much might be said, however, on this subject: different ranks of life live in a different manner.

Those who have been accustomed to exciters and sharpeners of the appetite, cannot, without injury, in many cases, leave their old customs; those who have not indulged, should avoid these heating things. Ginger is, perhaps, one of the least, the hotter spices the most exceptionable. As to leeks, onions, garlic, &c. they are in common use, but disagree with many stomachs, in which cases they should be avoided. Foreigners of the lower class, particularly in some parts of France, Italy, and Spain, almost live on garlic, bread, and water.

Of Extraordinary Condiments.

Amongst the extraordinary condiments are, turmeric, which enters the composition of *curry*, and East-India dishes, ices, fixed air prepared by art, asafœtida, gum arabic, which makes part of the food of the negroes and moors, when rice or millet cannot be procured.

A number of other substances are received as diet, in times of scarcity, which are here omitted.

As to ice creams, or water ices, they are delicious in hot weather and climates. In *Naples*, all the lower classes of people I have seen, drink iced water in the hot weather; all the principal streets of that city have tubs or casks, one with water, surrounded with another in which is ice, and, as the ice dissolves, an extreme coldness is communicated to the water. A scarcity of this article has excited insurrections. All ices act as cold baths to the stomach, and are proper against relaxation.

Asafœtida

Asafætida is used in dishes amongst the Indians in the East, by which the smell of their bodies is horridly offensive.

Folia Laurocerasi give a taste similar to bitter almonds ; these laurel leaves are used for various culinary purposes ; but they should not be used, for, though a small quantity may be grateful to the palate, yet it may injure ; as it is well known, a large quantity becomes a very dangerous poison.

Tobacco.

Tobacco is so much used in smoaking, snuffing, and chewing, that it demands a place in every book on diet.

Tobacco is narcotic, its taste is bitterish, and acrid.

Its Virtues.

It is used as a kind of food to the nostrils, or rather to the expansion of the olfactory nerve, when it be used as a powder, in what is called *snuff*.

If it be smoaked, it proves a condiment to the fauces ; and, if chewed, as is most common amongst sailors, it becomes a great re-

M m 2 creation ;

creation; and, when persons are accustomed to the use of tobacco in any manner, they are miserable if deprived of this luxury. It is best never to use it in any shape, except for the benefit of the national revenue.

Powder of the leaves of tobacco, with various additions, receives different names according to its preparation, smell, &c. as *Rappee*, *Scotch*, *Irish Blackguard*, *Strazburg*, *Maccaba*, *Spanish*, &c. The grosser snuffs are called *Rappee*; the finer powdered, *Scotch*, *Spanish*, &c.

Snuffs, attracted by the nostrils, occasion sneezings to those unaccustomed to its use, vertigo, anxiety, and, if swallowed, nausea, vomitings, &c. when tobaccos are chewed or smoked; they produce the same effects: but, those who are accustomed to their use, these effects are never observed.

Its Use.

Many think that snuff opens the head, sharpens the sight; which, however, is more opinionative than true. Those who are fond of snuff or tobacco will always give some specious pretext for its utility; but, to me, it has

has always appeared a bad custom. It is worthy of observation, that melancholics and mad persons are fondest of *snuff*, &c. it is their chief delight, and in a mad-house you cannot carry a more generous present than snuff, which our St. Mary-le-Bone committee annually experience, when they visit these unhappy objects at Bethnal Green.

The Abuse of Tobacco, &c.

For some time sneezing is excited, but after the nervous expansion in the nostrils is so obtunded, that smelling is obscured or destroyed: too much mucus is drawn from the nostrils; from whence nervous diseases, and an extenuation, from the too frequent use of snuff, causing a spitting, acrid in its nature.

The Fumes of Tobacco,

Whilst the fumes are received by persons unaccustomed to smoke, giddiness of the head is perceived, head-ach, anxiety, sleepiness, sickness, vomiting, &c. but amongst those to whom this habit is familiar, no such effects are observed,

A mode-

A moderate use of tobacco to moist habits solves the pituitous humors of the mouth and bronchia, proves laxative, and sometimes mitigates tooth-ach, common colds, and coughs.

The Abuse of Smoking.

Smoking, if long continued, creates apoplexy, epilepsy, and various complaints of the chest, jaundice, wasting of the body, and induces a blackness of the teeth, &c. &c.

Wormwood, gentian root, and other bitters, are used to correct the acid tendency of beer, as a substitute for hops, but ungrateful to the palate. The roots of clove July flowers, in some regions, are put into beer casks to give a pleasant taste to the beer, and prevent acidity.

Of inebriating Condiments and Opiates.

These substances have an inebriating quality; they lull, or intoxicate the senses, and are most commonly used instead of wine, in many countries, where the juice of the grape is forbidden either by the laws or religion.

Opium.

Opium.

Opium is a resinous, gummy juice, extracted by incision from the somniferous poppy, or *papaver somniferus*.

The odor of oriental opium is strong, narcotic; the taste nauseous, bitter, acrid, affecting the mouth and palate, with a sense of heat.

Its Virtues.

It exhilarates the mind and inebriates in small doses; becomes soporiferous, or causes sleep in larger; but if a large quantity be taken it is a *poison*.

Its Use.

The Eastern people, especially the Mahometans, who are forbid the use of wine, use opium as a delicacy, to raise the spirits, and to give boldness or courage.

In *Turkey*, *Perisia*, and *Arabia*, many people, but particularly the *Magnates*, or great, introduce opium in the form of pills, or electuary, on their tables, as a delicious, and luxurious

luxurious dainty, in the place of desert, &c., by which a vast quantity of opium is taken many times in the day. By this practice, they exhilarate, or rather intoxicate themselves, as though they had drank much wine, or spirits. This custom, by continuance, enables these people to use a dram or more in the course of a day : though not one fourth of a dram, taken by persons unaccustomed to opium, has proved fatal, and, in some instances, a much less quantity.

The abuse of opium is gaining daily ground in this country ; it is an excellent drug, when judiciously applied, but, by using such a remedy often, its medicinal efficacy becomes destroyed, except its dose be continually increased.

But the *abuse of opium* produces many evils amongst these people ; for the body gradually becomes emaciated, the appetite is destroyed, melancholy (for which opium is their only comfort) la guor, tremblings, stupor, and taciturnity, are induced : lastly, an abolition of memory, frequently followed by premature death. The abuse of opium, however, does not,

not, like spirituous liquors, generate the dropsy.*

Opium is, however, in such great esteem amongst the eastern people, that some of our gentlemen belonging to the East-India company have made immense fortunes by only obtaining the *opium contract* for a few years; a certain proof of the immense quantities used as a part of diet. It is a curious and interesting circumstance, and worthy of consideration, why men in all countries pursue habits of life that obtund or destroy, in certain degrees, the powers of reflection. In Europe, wine and spirits, snuff, &c.; in the East, opium, and other narcotics, are used for the same purposes. Neither religion, nor laws, have any power over this prevailing propensity.

The *Hyoscyamus physalodes*, of which the Arabians make what is called *Benge*, a most intoxicating preparation, causes tremors, terror, &c.

The

* In the former part of these works, my opinions concerning opium, in nervous diseases, may be referred to.

The seeds of *Harmala* are likewise inebriating, but used amongst the Turks.*

The *cannabis*, *agaricus muscarius*, *lolum temulentum*, *borminum*, *sclarea*, *millefolium* producing delirium, &c. &c. are all used for similiar purposes by different persons, to impregnate beer, &c. to raise the spirits, and drive away care and melancholy; but these adulterations, which many brewers have used, are very pernicious to the community.

Of Drinks.

Drinks come under seven different heads; as, waters, beers, wines, spirits, sweetened drinks, and warm drinks,

Of

* " III. Linnæus in Amœnitat, Aœad, vol. vi. p. 183. opinatur, ex hoc semine forte bolum fuisse, quem *Kempherus* apud Persas in convivio assumpit; unde inexplibili gaudio, risu, joco, suffundebatur. At finita cœna, dum ascendisset equum, haud aliter ipsi videbatur, ac, si Pegaso insidens, volitasset per nubes & coloratissimos iridis arcus, cumque diis cœnasset. Altero die oblitus erat gestorum omnium." From this, and other such facts, people intoxicate or raise their spirits, or destroy the powers of thinking, by many other means besides wine,

Of Waters.

Water is a constituent principle of bodies, which, in its purest state, is simple, fluid, inodorous, insipid, and pellucid.

There is, however, a great variety of waters, from hence they may be generally divided into

Simple, which are called sweet, and contain no extraneous element.

Mineral, which abound with mineral particles.

Soft, which contains little ; and

Hard, which deposits much selenite sediment.

Salubrious, which are pure,

Insalubrious, which are impure, or have some vicious quality.

Pure good Water ought to be clear, without smell, taste and color ; light, cold, and contain a little fixed air ; and, if examined by a chemical analysis, exhibits no heterogeneous principle ; which is known, if by adding the acid of sugar, by a fixed alkali, and a nitrous solution of silver, little or no turbidness

turbidness appears; for water, perfectly pure, is scarce found in any part of the world,

Its Virtues.

Water alone does not nourish the body,* but water extinguishes thirst, cools, renders the body humid, dilutes the humours, lest, by spissitude, they would not be able to circulate in the vessels; it excites the excretions by the kidneys, intestines and skin, and preserves the health of the body. Water drinkers commonly are said to have an accurate taste, good appetites, quick hearing, sight, and memory: but I have known water-drinkers dull, slow in conception, and drop-fical in the latter part of life. Many disorders have been chiefly cured by copious draughts of water,

Its

* Ill. Halleri El. physiolog. T. vi. p. 181. Aquæ potus famem ita lenit, ut diu absque cibo vita tolerari possit, quod ægrotorum apositia laborantium exempla docent. Deficiente autem utroque alimento inedia decem dierum homini, ceterum sano utplurimum lethalis est,

Its Use.

It is necessary to drink pure water crude and cold, as offered by nature ; for it is more grateful to the tongue, quenches thirst better, and strengthens the stomach more than water that has been *boiled*, and again cooled.

The best water is the spring and mountainous, from rocks, the next is the river, the worst is well, and all stagnant waters.

The quantity to be drank cannot be easily ascertained, as persons, under different circumstances, require different quantities ; and this should be determined by size of body, exercises, &c. and by the quantity of solid foods taken : those who eat roast require more than those who eat boiled meats and broths ; those who eat meat and bread, more than those who live much on fruits and vegetables, &c.

Waters are injurious or hurtful under some circumstances.

1. *Putrid water* contains a putrid air, and is known by its nauseous stinking smell and taste, and, if drank, or even drawn in by the

breath, is often productive of putrid diseases,* as diarrhœa, dysentery, yellow fever, &c.

The *purifying* such water is by exposing it to the air, and agitating it; by uniting fixed air to it, by mixing it with vinegar; or, when first put into their casks, if a little oil of vitriol be added, it would prevent the putrefaction, and be a very salubrious drink.†

2. *Turbid* water, which contains much argillaceous phlogisticated earth, or aëreous, of an opaque colour, and muddy unpleasant taste, because mixed with mud. It is known to create intermittent fevers, and obstructions of the viscera.

The *purification*, or emendment of this water, requires rest, or filtration through a filtering stone or paper, or pure sand.

3. Water

* I remember, at the *Havanna*, in the year 1762, that a terrible putrid yellow fever arose from the pumping up of what is called the *bilge water*, on board some ships: the stench was horrid; and the men working at the pumps have suddenly fallen down, a fever followed, &c.

† *Tode Bibliothek. Histoire de l'Academie de Sciences de Paris, 1722.*

3. *Water too hard.* Waters which contain aërated calx, selenites, or other terrestrial salts, are called *hard*. They are known by a dry, terrestrial, or austere taste, very ungrateful to the true water-drinkers: with a solution of the *acid of sugar*, or fixed alkaline salt, they become turbid; in boiling, they incrustate the vessel. For some purposes, as making tea, coffee, &c. hard water is approved by many, though by no means so salutary as soft. Beans, peas, and other leguminous foods, will scarce ever soften, when boiled in this water, nor will meats grow tender, if oldish, but remain hard, especially if the meat be not from a young animal.

Tin grows blackish, generally, in these waters; they are not fit for the purposes of preparing hemp, bleaching or washing linen; they dispose people to the obstructions of the viscera; and, by a long use of hard water, health is diminished. About Hampstead there is much of this water.

The *emendation.* If aërated calx be the cause of the hardness of the water, then it may be corrected by merely boiling and cooling afterwards; the calcareous sediment being

being deposited, the water ought to be exposed to the air, that it may receive a portion of fixed air, which it will attract. It may be proper for long sea voyages, as it is slightly antiseptic, which is the opinion of Bergman.

Calcareous and selenite hard waters cause the cardialgia, or heartburn, a sense of oppression, indurations of the viscera and glands, and sometimes fluxes, to those unaccustomed to their use.

4. *Iced water* is hurtful, if drank when the body is heated, and in a state of perspiration; as pleurisies, inflammation of the lungs, polypus of the heart, apoplexy, inflammation of the stomach, liver, and violent continual inflammatory fevers, have often originated from the sudden coldness of such drink. If persons drink cold water when heated, they should continue their exercise.

Iced water, however, is a proper drink for weak stomachs, as it acts as a cold bath, and strengthens the coats of that viscus; but as few persons drink it in England, except with wine, &c. to dwell long on this subject will be useless.

5. *Boiled*

5. *Boiled water*, refrigerated, is not so salubrious as pure water unboiled; for boiling destroys the greater part of its fixed air, and lays it open to the putrid air; therefore boiled water is not so refreshing as cold water, unless it stand a long time, and attracts from the atmospheric air the fixed air it may have lost.

Distilled water has an empyreumatic smell, which, on being exposed to the air, it loses.

6. *Hot water* relaxes the stomach, as happens to great *tea drinkers*; but water, very hot, less debilitates the stomach than the warm, because its heat irritates; it is, however, very improper to take any liquid too hot.

7. *Saline waters.* Waters abounding with glauber, culinary, bitter cathartic salt, green vitriol, &c. are improper for internal domestic use, with foods, as the first are purgative, and the last is a medical tonic.

8. *Water too much aërated*, produces, in some, vertigo, distentions of the stomach and intestines, and a sensation of pain.

9. *Sulphureous, or hepatized waters,* which are known by a smell like to a putrid egg, and a very disgusting taste, and unless the sulphur be precipitated by spirits of nitre, they cannot be drank, except as medicine.

10. *Plumbated water, or water impregnated with lead,* by leaden cisterns or leaden tubes, or vessels lined with lead, are injurious and dangerous, and capable of producing colics, palsey of the stomach and intestines, &c. &c.* This water is discoverable, by dropping six drops of a solution of silver, made by the nitrous acid, into four ounces of the water, which produces a violet-coloured tinge.

11. *Cupreated water, or water kept in a copper vessel,* is improper, which is known, if the spirit of sal ammoniacus be dropped into it, by its blueish color. It produces vomitings, and other disorders.

Rock spring water is best.

* In the St. Mary-le-bone Infirmary, we have constantly poor persons, who work at the lead manufactory, seized with colics, obstinate costiveness, palsies, tremors, &c. These are commonly soon cured by aloetic bitters, and oily cathartics, repeatedly exhibited.

River water is next to be prefetred, when purified ; but in summer time, from the putrefaction of the sperm of fish and of vegetables, it is often productive of fluxes, heartburn, fevers, &c.

The *water* of the *Nile* produces scabby eruptions to those not accustomed to drink it.

The *Thames water* is cleansed by every tide, and, when depurated, is wholesome. River water, mixed with much clay, produces the struma.

From the softness of river water, it is proper for boiling meats, leguminous foods, and for making beer, washing linen, &c.

Well water differs, according as it springs through clay, sand or mud : that which arises from a sandy or gravelly bottom is the best ; that from clay is inferior ; but the well with a muddy bottom is the worst.

Snow water, and dissolved ice. This water produces strumous swellings, which fact is well known near the *Alps*. I have seen some frightful instances of this nature in that country ; in Derbyshire, from a similar water, the same effects are observed.

Fen and lake waters are frequently insalubrious, as likewise stagnated pond waters, if the bottom be foul.

Sea water occasions nausea, vomiting, purging, &c.

Distilled sea water, exposed sometime to air, is salubrious.

In the English men of war, there is a contrivance for occasionally distilling sea-water, invented by the ingenious Mr. Brodie, of Cary-street; so that one fire answers culinary purposes for the ship's company, and performs the distillation at the same time.

The ice, floating on the surface of the sea, in northern climates, when dissolved, and exposed a little to the air, becomes a sweet water, and fit for drinking.

Of Beer, Ale, &c.

Drinks that are produced by the infusion or decoction of malt, or other grains in water, undergoing a fermentation, and impregnated with the bitter of hops, &c. are called beer, ale, &c.

Beer,

Beer, and ales, have different qualities, according to their strength, age, mode of preparation, &c.

All new ales, and small beer, are flatulent and fattening, particularly if the ale be strong, and not much hopped.

The London porter is a very good strengthening malt liquor for those who use hard exercise.

Those who accustom themselves to drink malt liquors in moderation, scarcely ever have the gout; but its immoderate use produces corpulency, and sometimes dropsy.

Beer, if not very strong, is less heating than wine; it is a nourishing and analeptic drink; hence proper for the feeble and emaciated, if they labour under coughs or difficulty of breathing. In many, where wine sours in the stomach, beer or good ale will agree; if it be well hopped, it is said to prevent the gravel, gout, or stone. I am convinced, that when the gout hath arisen from *wine-drinking*, that malt liquor, long continued, and omitting wine, is a very useful plan in the diet of the gouty.

Of

The noxious Qualities of Beer.

Beer can injure, by cereal mucus and acid feculencies. The nervous and hysterical are almost suffocated by the air extricated from new ales or small beer. Beer, which is viscid, is said to generate gall stones, perhaps, chiefly by covering the ducts in the duodenum with mucus. Beer does not agree with persons inclined to grow fat; for it surprisingly increases their bulk, and occasions short breathing, and sometimes suffocation and apoplexy; it increases the coagulable lymph, and sometimes generates obstructions in the vessels.

Beer that is foul or sour is apt to produce purgings, and cholics: these effects are best corrected by magnesia and ginger.*

In England, where we have the very best sort of beer, made of both pale and brown

malt,

* Fœc cerevisiaz leni calore siccata, & in pulverem reducta, si homini robustissimo ad grana tantum ita prebeatur, teste *Kramero, med. Caſtrenſ. p. 110.* vehementiffimas cum maximis doloribus conjunctas æw & nætw purgationes excitat.

malt, &c. to drink in plenty, if they be good; nothing can be more wholesome when drank in moderation, and not mixed with other liquors of the acid kind. The constitutions to which beer is mythical, have been already considered.

The *London* porter is one of the best malt liquors; and the consumption, as to quantity, is incredible. It sustains our artificers and labourers, in a remarkable manner, under the greatest exertions of bodily exercise; many are the proofs in London, and on the river Thames, but among none more than those hard working men the coal-heavers, anchor-smiths, &c. There are various species of beer made from batley, wheat, rye, oats, mays, and spruce, which last is highly antiseptic, diuretic, and antiscorbutic, when made with the extract of water and molasses; but it is too flatulent for the feeble and nervous stomach.

Bottled beer, if abounding with fixed air, which some produce, by an addition of very small portion of sugar and cremor tartar put into each bottle, is antiseptic and pleasant,

but

but apt to affect the head of many, owing to the distention of the stomach, &c., which succeeds its use.

Mum is prepared from barley, and is as thick as syrup, chiefly made in Brunswick: it is sweet and spirituous, and so durable, that it may be carried to the hot climates, and back again, without injury. It is nourishing, strengthening, very stimulating, and sometimes inebriating.

Of Wines.

The juice of grapes, from what is called *vitis vinifera* by Linnæus, after fermentation, is called wine.

Its Virtues.

Wine is to be considered here as a beverage, rather than as a medicine; when, with or without water, it is used as a drink at the table, making part of our daily diet. A moderate use of wine strengthens the languid stomach, excites the appetite, helps digestion, strengthens the nervous system, increases heat, resists putridity, promotes transpiration, and,

and, if acid, increases urine. A spare use of wine agrees with the aged; in infancy it should be always prohibited; for those who begin to drink wine after manhood, are much more likely to *escape gout, gravel, stone, and chronic diseases*, and to be healthful and long-lived, than those who, in infancy, or in youthful age, or, whilst they be growing, are indulged with this liquor.

Its medical powers are numerous. It is a cordial antiseptic in putrid and nervous fevers, unaccompanied with inflammation, which they generally are: it is the best corroborant in a convalescent state, after fevers, &c. and in many morbid affections. It cures the *gutta rosacea*, which water-drinkers are accustomed to, and assists in removing diseases arising from debility of the stomach and digesting powers. Wine is a preservative against putrid diseases, and the irritating effects of vegetables and fruits. In nervous disorders, unaccompanied with an acid, it is very useful. It exhilarates the mind, and is the greatest friend to conviviality.

The Abuse of Wine.

Wine taken in too large quantities, from its spirituous principle, increases too much the motion of the blood, and determines it to the head: from hence inebriety, temporary delirium, sleepiness, and sometimes apoplexy.

A long continued abuse of this excellent liquor produces tremors of the hands and visceral obstructions, gout, stone, jaundice, asthma, dropsy, extreme debility, palsy, and apoplexy.

The constituent principles of wine are, water, alcohol, the vinous acid, oil, earth, fixed alkaline salt, fixed air.

Wines differ in respect of age, color, taste, spirituousness, places, the effects of the sun, situation, years, &c.

In respect of age. New wines, that are of the first year, are commonly mucous, turbid, acid, and not very spirituous.

Old wines, which are many years old, are clear, less acid, and more spirituous. In respect of color, they are divided into white and red.

red, which last are more strengthening and astringent.

In respect of spirituous strength, they are divided into generous, which contain much spirit, and weak, which last contains little, or less alcohol or spirit, but more water.

In respect of regions where vines grow, the wines take their different names; as Italian, Spanish, French, German, Hungarian, Bohemian, Portugal, Cyprus, &c. &c.

In respect of the yearly and successful growth and goodness of the grapes, the years are called good, bad, or middling; for on the goodness of the seasons depends the goodness of wine.*

In respect of ill qualities which wines may have. Wine may be too new; and from its acidity will produce heartburn, gripings, fluxes, &c.

Wine too sharp; as when immature grapes are pressed, will cause the colica pictonum, and contractions of the limbs.

Wine,

* Tokay wine does not become deliciously sweet and good every year; for if the autumn be rainy, then the wine is too acid: there are other ill qualities that depend on the seasons, which no human foresight can avert. We therefore prefer the wine of one year to another.

Wine, too much sulphurated, is inimical to the breast, head, and nerves, and produces coughs, consumptions, colics, &c. It is discoverable, by adding a few drops of the solution of silver in the nitrous acid to such wine, for it becomes brownish or blackish. An egg, or a shilling, put into such wine, becomes blackish.*

Wine mangonized with litharge, or lead.

Wines which are acid, are dulcified, or rendered sweetish, by an abominable practice, by filings of lead, litharge, or other lead preparations. This is discoverable by the *liquor probatorius*, which makes the wine brownish, turbid, blackish, &c. † A much less certain criterion of lead being in wine, cyder, &c. are the use of the acids of sea-salt, vitriol, or alcaline salts.

Wine

* Bruchmanni Epist. Itin. 16. Cent. 2.

+ The liquor probatorius is thus made: Take of auripigmentum, powdered, 30 grains, of quicklime 2 drams; mix them, and boil them in one ounce and a half of rain water, for the space of half an hour; when cool, let the liquor be strained, and kept closely corked in a phial. No other metallic substance, but lead, can render sour wine or cyder sweet.

Wine mangonized with lead has a very sweet taste; but it produces the most terrible symptoms; as pains in the head, palsy, colics. Many lives are lost yearly by that villainous practice; as likewise by putting wines or cyder into cisterns or vats lined with lead.

The most certain methods of discovering the fact, is by evaporating a quantity of the wine by boiling, and afterward fusing, in a crucible, the residue in a fire, by which the lead is certainly discoverable.

As to the coloring made raisin wines, &c. by burnt sugar, red sanders, juice of myrtles, &c. to imitate those they are sold for, not much mischief arises from the deception.

Of acid Wines.

These are distinguishable by their acid taste; they are furnished with a subtile predominating acid, therefore they saturate alcali.

Their

Their Virtues.

They dilute, resolve, and quench thirst, promote the appetite and digestion; are sudorific, very diuretic and antiseptic. These wines are considered by many as the best for table use, diluted with water. Amongst these wines are the Rhenish, the Moselle, the Neckarine, Austrian, Franconian, &c. but they are gouty wines.

Of sweet and acid Wines.

These contain less acid, and are less diuretic, and more spirituous, than the former; as white French wine, Champagne, white Hungarian wine, Port wine; which last is in the greatest esteem in England; but it is frequently, at taverns, inns, &c. much adulterated; and it is said, that wine is often sold for port, in which there is not a single drop of port, but a mere fabricated composition of some of our English artists.

Of

Of austere Wines.

They are known by an astringent taste and red colour.

They contain much tartareous earth.

Their Virtues.

They are astringent ; they are apt to heat the blood ; they generate acids, and, if used copiously, they insipiate the fluids, and contract the lacteal vessels ; so that the purest nourishment is not received into the body.

These wines agree best with the debilitated, when taken moderately, to persons subject to laxity of the intestines, and who labour under a weak stomach.

Amongst such wines may be reckoned the red Hungarian wine, red port, red French wine, Burgundy, hermitage, claret, pontac, *vin de Grasse*, &c. &c.

These wines, if drank freely, are productive of the gout. It is well known, that many athritics produce a fit by what they call a good batch of claret, &c.

The wines that have a very sweet taste.

The acid is impregnated with much mucus and oil in these wines.

Their Virtues.

If they be spirituous, and to some of these spirit is added, they are heating, cordial, stomachic, diaphoretic and anti-emetic. These wines agree with old people, the hypochondriac, costive, and gouty, if the stomachs be greatly debilitated, and abound with acids. They injure the plethoric or full habits, the florid and sanguineous, and the young, in prime of life.

These wines are called generous, or strong, or milder and weaker.

The *generous wines* are—the sweet Hungarian, Spanish; as Malaga, Mountain, Malmfy, Madeira, Cyprus, and all other strong sweet wines.

The *weaker sweet wines* are, Italian, Tyrolian, which, in travelling through this last country, I found very indifferent, as well as food, they are a bear-like, savage people in these regions.

French

French Sweet Wines.

The *dulcified*, which wine is prepared by raisins and sugar.

The *plumbated*, or wine sweetened by lead, which has been already mentioned as a most dangerous, though slow poison, if ever so slightly impregnated.

Tokay Wine.

This excellent Hungarian wine, kept as a present chiefly for crowned heads and noble personages, is the produce of the country near Tokay; but, besides Tokay, there are some cities which do not cede to Tokay in the excellence of their wines, as *Tartzal*, *Mad*, *Tallya*, *Tzanto*, *Kerester*, *Liszka*, *Tolizua*, and from their excellence are called *Tokay*.*

There are four sorts: 1. The *essence*, which is made from the grapes dried by the heat of the sun. This is the most sweet and excellent, and distributed to the *Magnates*. 2. Wine of the first growth. 3. Of the second. 4. and ordinary.

* Cet. Domini diff. de vino Tokaiensi 1785, Trajecti ad Rhenum.

Tokay Wine is a cordial, stimulant, diaphoretic, stomachic, nervine, and, from its oleous sweet quality, very nutritious. It is chiefly used after other wines, as an excellent cordial, the same as *Cape* or *Cypress* wines, &c.

Amongst the sweet wines are *Cape*, *Frontiniac*, *Malmfy Madeira*, *Canary*, *Alicant*, *Lachrymæ Christi*, *Vesuvian del monte Puliciano*, *Tinto*, *Muscatel*, &c.

Of acid Wines.

These wines are known by an acid sharp taste. They are impregnated with much acid tartar, and produce acids in the stomach, strumous swellings, visceral obstructions, stone, gout, eruptions, flushings, &c.

These wines are in *Bohemia*, *Saxony*, *Silegia*, *Alsace*, *Switzerland*, &c. &c. They are scarce drinkable, and are used to boil with meats into broths, &c.

Of Spirituous Liquors.

Inflammable liquids, miscible in water, volatile, fragrant, made from the spirituous fermentation

mentation of grapes or other vegetables, and raised by distillation, are called spirituous liquors.

Amongst these are various spirited waters, rum, brandy, gin, arrack, and a variety of cordials.

Uses.

Spirituos liquors are useful, as cordials and antiseptics, in many cases : they agree with the flatulent, hypochondriac, nervous, and low spirited ; but, if continued always, do mischief, destroying the tone of the stomach, viscera, &c. producing dropsy, &c.

The Abuse of Spirituous Liquors.

Their immoderate use produce stupefaction, drunkenness, heat and viscidity of the fluids, inflammatory diseases, glandular obstructions, inappetency, debility of the nerves, tremors, consumptions, jaundice, hectic fevers ; dropsy, that commonly proves fatal ; for, the patients, if once cured, in general fly again to their favourite strong spirits.

Spirits are prepared from barley, plumbs, cherries, sugar cane, rice, and even milk, which last is used in India and Tartary.

The observations on spirits should not be quitted, without warning seriously all its votaries of their dreadful slow poisonous qualities. Thousands of the lower ranks are annually destroyed by their use. So many instances of those unfortunate victims have I seen, as mothers destroying their infants by dram-drinking, &c. that I had it in contemplation to make an enquiry, whether the total abolition of the use of spirituous liquors, unless diluted much with water, would not be a national benefit; * or whether the increase of brewing malt liquor, so as to give the people a more wholesome drink, at a lower price, would not be as productive to the revenue as the present duty on spirits, &c. At all events, spirits should not be sold, unless diluted, except for certain purposes.

Of

* I remember the time when *gin* and other spirits were so cheap, that all the lower classes of people could get drunk for a few halfpence. *Hogarth*, the immortal *Hogarth's print of Gin-lane*, is not exaggerated, where the intoxicated even spit their children for roasting, or for the pawnbroker; and other mad drunken freaks were committed equally horrid.

Of Milk.

Milk is used for various purposes, and is proper for the consumptive, especially buttermilk, and rennet whey, or skimmed milk; and it is useful for the cancerous, scorbutic, and convalescent; but does not agree with the drinkers of wine, spirits, or those who have a prevailing acid in their stomachs, for in these it coagulates.

Seltzer water may be drank with milk, or barley water, in many cases.

Milks are various, as the human, asses, cows, goats; their principia are much the same, and they differ only in point of more or less oil, or whether the animal feeds on grafts, &c. &c.

A long continued milk diet has cured many chronic disorders; but it is seldom in the power of a physician to prevail on his patients, who are opulent, to leave the pleasures of a well-stored table, to even obtain a radical cure of any inveterate disorder; and, indeed, in some cases, the change of diet is highly hazardous, and ought never to be prescribed, but on solid and consistent grounds.

Sweet

Sweet Drinks.

Sweet drinks are, must, wormwood wine, cyder, cherry, elder wine, &c. lemonade, orangeade, orgeat, capillaire, &c.

They are cooling and pleasant; but some agree better with certain stomachs than others, and, when they disagree, they should not be repeated. As to cyder, it produces the rheumatism, gout, gravel, and stone, much more than malt liquors, and, therefore, less salubrious.

Warm Drinks.

These are, tea, coffee, chocolate, warm punch, brandy and rum with warm water, &c. and warm broths.

All warm teas relax the stomach, and, unless drank in small portions with milk, they are injurious, especially to the nervous, and all who are debilitated, and who labour under a prevailing acidity in the stomach.

Tea is universally used in this country by all ranks of people, and, with milk or cream, makes an excellent breakfast, if the quality

be

be good, and it agree well with the stomach. The lower class relax their bodies by this pleasant liquor, and then drink spirituous liquors to remove the sensations tea produces in their stomachs; the mischiefs produced by such practices must be obvious. Tea is better, if cream be added, or the yolk of an egg be beat up in it, for then a light nutriment is produced, without destroying the flavor of this favourite liquor, which should never be drank without previously eating bread and butter, rusks, biscuit, &c.

Green tea has a grateful scent, and more fragrant than *Bohea*; it has an astringent taste, and, if of the best sort, is very pleasant, when properly infused with boiling water, sweetened with sugar, and united with milk or cream.

The leaves of green tea, when recent, fresh, and green, are said to be narcotic; but after they are dried, and kept about one year, they lose that power.

Green tea injures delicate, nervous habits, relaxes the stomach, and sinks the spirits, if drank in great quantities, much more than *Bohea*.

Bohea

Bohea tea. The leaves fresh are narcotic, but, when dried, very grateful. From the virulence of the leaves when green, they are dried, and preserved one year before they be used.

In coming from China to England teas lose much of their pleasant fragrance, and much more afterward, by remaining some years in the East India Company's warehouses.

The consumption of this article in England is astonishing.

Its Use.

Tea is diuretic, and gently diaphoretic; it agrees with persons who are inclined to drowsiness, with full habits, the corpulent and hearty eaters, as tea cleanses the stomach, and counteracts the bad effects which would happen to those who indulge at table.

Abuse of Tea.

When tea is improper, and used in great quantities, it occasions paleness, tremors, wakeful-

wakefulness all night, relaxes the stomach, and debilitates the whole body, destroys the teeth, produces seminal weaknesses, dropsy, leucorrhœa; the Chinese pronounce tea noxious in inflammations of the eyes, in the cholic and palsy.

The best green tea is the gunpowder and hyson; the best bohea is the souchong; the inferior teas are injurious to the lower classes of people; but custom so much prevails in the use of this liquor, that all advice is lost on the subject: it has certainly *degenerated the race of Britons, with regard to bodily vigor;* the tea-drinking *nurse* cannot afford good milk for their *infants;* and abundance of warm water so relaxes the stomach and sinks the spirits, that it cannot be salutary. It is certainly a sober, but not a nutritious liquor.

Chocolate is nourishing, and proper for the debilitated hypochondriacs, and those who labor under the piles, or costiveness.

Coffee.

Coffea Arabica of Linnæus. The odor of the seed, when unroasted, is scarce perceptible.

ble. The coffee roasted has a grateful, fragrant, penetrating smell, especially if recently roasted. The taste is bitterish, and agreeable to the smell.

The *Turkey coffee* is superior to the *American*, or *West Indian*, but, perhaps, the preserving it a much longer time before it be roasted, may be one cause of its superiority.

It came into use about the middle of the seventeenth century, and was drank in the morning, and after dinner, by many.

Its Virtues.

Coffee roasted has a subempyreumatic taste, and accelerates the motion of the blood; warms and stimulates, is drying, attenuating, and strengthens the stomach, promotes urine, and evacuates worms and wind. Coffee drank in the morning often removes costiveness, elevates the sinking spirits, causes wakefulness for those whose lucubrations require it, and it dispels sleep. Without milk, after dinner, coffee promotes digestion,

tion, and retards putrefaction.* It excites transpiration, promotes urine, and increases the vital motions of the blood.

Some add in boiling coffee shavings of hartshorn, but this gelatinous substance takes off the flavor: others add cold water; others strain it through linen; and many in England add mustard, and some ginger; which last addition is proper for the flatulent.

The Arabians and Oriental people drink coffee without sugar; but the Europeans add sugar, milk, and some cream to their liquor,

The medical powers of Coffee.

It removes headach† arising from a weak stomach, or from suppressed perspiration, and, by increasing urine, frequently evacuates gravel or stony concretions.

Chronic diarrhoea it has cured, and some authors say, the intermittent fever; but this I can-

* Percival, vol. ii. page 712.

+ Ill. Bergius M. M. p. 113. Novit foeminam quæ a 20 annis quovis nunc evigilavit cum cephalalgia, tantisper engravescente, donec potum coffeeæ haufisset, ex quo per totum diem levatum se sensit.

I cannot credit.* It counteracts the operation of opium, and other narcotics.†

Its noxious Qualities.

The abuse of coffee, when too strong, and drank in great quantities, and often, from its empyreumatic oil, and the relaxing effects of warm water, produces anxiety, palpitation of the heart, too much wakefulness, and irritation both bodily and mental, particularly to the nervous and debilitated. The excessive use is productive of head-ach, vertigo, tremors of the limbs, timidity, pusillanimity, breakings out in the face, a debility of vision, palsy, and even apoplexy. It increases hysterical and hypochondriacal disorders, the menstrua, piles, flenderness, and virile impotence. It does not well agree with the plethoric, biliary, emaciated, persons affected with spitting of blood, or the very hysterical, when taken too frequently; but,

* Ill. Murray, L. i. p. 397.

† Arabes, qui abusu opii & confectione benges somnolenti & depressi evadunt, solo coffeeæ potu eriguntur. *D'Arvieux voyage dans la Palestine*, p. 196.

but, used in moderation, if it agree, it is not improper; especially if the quantity taken boiled does not exceed three or four ounces, with or without milk; or two moderate cups.

There are many substitutes for coffee, but none so agreeable, as rye bread burnt, barley, rye, cichory root, or scorzonera toasted, small beans, and the *semina helcanthi annui*, &c.

Cocoa is the roasted nutshell from which the chocolate is extracted. This boiled, makes a pleasant, light, and nourishing food for the sick, when united with milk.

Punch, and *spirit and water* drinkers, are subject to loss of appetite, tremors, dropsies, &c. if they indulge freely in those liquors. All spirits are unwholesome, unless drank cold, and much diluted.

Of Broths and Soups.

Soup or broth made from beef, is the gelatinous and a little of the oleous parts extracted from beef, by gently boiling with water a long time. It is very nutritious; it becomes acercent in its first degeneration, and afterward putrefcent.

It

It is commonly eaten in the beginning of dinner, and it is common to add bread, barley, rice, &c. to broths; these impede the putrescent disposition of animal broths, and are proper for all persons, except where a dry diet be necessary.

Veal broth is mucilaginous, and jellies very nutritious and involving; hence proper when the *caustic lixivium* is given to persons labouring under the stone: and it is likewise proper food for the healthy. It should be observed, that those who eat broths or soups, and boiled meat, in the beginning of dinner, receive less injury from *freedoms* in wine, than those who do not eat soups and broths.

Mutton broth is not so nutritious nor glutinous as beef and veal.

Broths from cocks or hens, which are old, are very nutritious and strengthening, not stimulating.

Broth made of turtle is nourishing, anti-scorbutic, and antihectic, but not so excellent in cold climates, as in the native places of turtles in the West Indies, &c..

Broth made from frogs is nourishing, and lightly gelatinous. Broths made from the legs

legs and thighs of frogs, with various vegetables, is recommended by some in the consumptive, asthmatic, and the hectic, as a light diet.

Broth from snails is nourishing, and obvolves acrid humors, and is thought useful for the consumptive; but if the lungs be ulcerated, neither broths, nor any thing else may preserve the patient's life.

Broth from fish is gelatinous, alcalescent, diluting, and nourishing. It is chiefly used in Roman Catholic countries, on meagre days, and for the sick.

Broth of vipers, eels, &c. is gelatinous, very alcaline; from hence, resolving, antacid, and diaphoretic.

Consummated broth, or broth composed of many sorts of meats, and concentrated into a rich jelly, partake of the uses of those which predominate.

All animal broths, it should be remembered, are highly improper in putrid diseases.

Egg Wine, composed of wine, the yolk of eggs and sugar, is a nutritious and stimulat-

ing drink, and sometimes is given at night in colds, &c.

Ale, mixed in the same manner, is more strengthening, but is apt to clog the stomach.

Caudle, both white and brown, made with small beer, ale, or wine, and oatmeal boiled in water, with spices, &c. are used chiefly during the times of lying-in. The simple beer caudle produces good milk, the wine not so good; and, when brandy, rum, &c. be added, unless the spirit evaporate, it becomes too heating for the nourishment of nurses who suckle their infants.

CONCLUSION.

HAVING treated on almost all the various kinds of foods and drinks used in different parts of the world; and having examined their qualities and application in practical life, a few maxims, drawn from long experience, shall conclude the work.

Foods for Infants.

The breast milk is the best food, provided the nurse will live on plain meats and bread, without vegetables, (potatoes or turneps excepted) and only drink malt liquor.

Children who suck, should never have any fruits, or sugared foods; for they turn acid, coagulate the milk, and produce acidities, the rickets, and other diseases, particularly of the mesenteric glands. Animal broths, or beef or veal tea, with a little milk and bread, or biscuit powder, made

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into pap, is the most nutritious food for infants, who do not suck.

Milk, a little watered, if united with bread, is nutritious and proper, when beef or veal tea cannot be procured.

Children should never be indulged with wine, beer, ale, fruits, or sweetmeats; for though they may escape disease under such unnatural, incongruous treatment, yet their healths may be preserved much better, the bodily fibres will be firmer, and the children, of course, stronger, without such indulgencies. The handsome shape, and future fine figure of the human body, depends on the judicious adoption of proper food for infants: bandy legs, thick ankles, crookedness, &c. are more owing to neglect or prevailing prejudices in nursing, than is imagined by persons not well comprehending those subjects.

The Diet for Youth.

Simplicity in diet bids the fairest to improve bodily strength, and to produce clear active minds; therefore plain meats, bread, and a moderate use of vegetables, are proper from

from the age of three or four to twenty-one.

All *wines*, *spirituous* and *strong liquors*, should be avoided, while young persons are in a state of growth ; it is best for the constitution to avoid wine, or use it very sparingly until the age of twenty-five or thirty ; those, who observe this rule, will generally escape from those chronic diseases, which attack free livers in the latter part of life ; namely, rheumatism, gout, gravel, stone, jaundice, dropsy, asthma, apoplexy, palsy, &c. &c.

All youthful bodily exercises should be practised, as running, jumping, dancing, fencing, riding, and hunting, by those who can afford to keep horses ; for bodily vigor is increased by manly exercises, as likewise muscular agility.

Whoever wishes to have health in old age, should observe these precepts. Those who exercise the mind, and study much, can seldom bear strong bodily exercise ; *perpetuum mobile mentis corporisque non datur*.

Middle Age.

From twenty-five to fifty years of age, men should not neglect their accustomed exercises; for a contrary conduct, without they diminish the quantity of daily food, or purge, is commonly productive of *chronic* and *grievous diseases*; but all exercises should be accommodated to the strength of individuals; what may be absolutely necessary for one person, may be injurious to another; *est modus in rebus.*

In the latter Stages of Life.

The diet, air, exercises, necessary for persons from the age of fifty to the age of eighty, ought to be various, according to constitutions, customs, strength or weakness of body; but, in all instances, the sedentary are more liable to diseases than the active; those who much exercise the mental faculties, more than those who live without meditation, or much thinking; those who drink much wine, more than those who drink beer, and observe moderation; those who drink spirits suffer more than any others.

Costive-

Costiveness, in the latter part of life, should always be prevented.

On the Fat or Corpulent.

Fat people are subject to numerous diseases, they are commonly disinclined to use bodily exercise; hence the muscular, or moving powers become weak, in proportion as fat increases, and they are always liable to lethargy, apoplexy; but more to dropfy, if by any accident the red particles of blood should be diminished.

The corpulent should exert their moving powers; but their constitutional indolence induces them to hate motion, or any great bodily exertions; the less they attempt to rouse, the more inactive and grosser they become, until they seem almost suffocated with fat.

Persons inclined to corpulency should avoid all oleaginous food, butter, fat of meats, ale, &c. *Lean meat*, bread in moderation, abstinence from liquid food, as much as possible, I am certain will reduce the size of the most unwieldy; but, in a long life, accompanied with immense experience and observation,

observation, I must say, that corpulent people are the least manageable of any, except the gouty, in point of regimen: they commonly possess good humor and laughter, and they rarely disturb their constitutional tranquillity at the expence of not gratifying their inclinations. I have known many of this class declare, they would sooner die than live by rules.

Lean Habits.

Persons of lean habits are less liable to disease than the corpulent, and those who are in the middle state, less than either fat or lean people.

Thin, slender people, in old age, are subject to gout, gravel, stone, rigidity of the muscles, and a diminution of the moving powers.

If these increase a little in corpulency, as they advance in life, they preserve their moving powers; for the oleaginous substance in the interstices of muscles and all their fibres, are best preserved in motion by a due quantity of fat.

If

If the lacteal system be pervious, and the glands of the mesentery not indurated, the contrary of which are principal causes of flenderness of body; butter, cream, a moderate use of fat meats, oil, and such like substances, may be highly beneficial. If, however, the lacteal system does not take up a sufficient quantity of oleaginous particles, a thin body can never become more corpulent, but grow thinner and thinner, as old age advances.

Irritable Persons, or those who possess exquisite Sensibility.

These should live on the driest diet possible, and avoid all inflammatory strong liquors, &c. but much may be found on this subject in the Treatise on Nervous Diseases, contained in the first and second volumes of these works. They should strengthen the body, without stimulating the moving powers, or nervous system, and they should endeavour to command their minds, so as not to be ruffled. The earnestness, on all occasions, of these people, and their exquisite feelings, ever diminish their bodily

bodily health ; they expect more virtue than mankind are disposed to practise. If they would keep in their mind what I have often advised, but have seldom found followed, they might be happier, and preserve their health. They should be prepared against mortifying events, and not be too sanguine in their expectations ; for *Blessed are those who expect little, they will seldom be disappointed.*

Air has different qualities and effects on the human body ; that air, which contains least electric fluid, as the east and north-east wind, is most destructive to vegetables, and injurious to the human species. The air on high mountains is unfit for all persons subject to pulmonic diseases, asthma, coughs, &c. therefore they should choose situations in valleys, not too low, surrounded, if possible, by high hills, to the north and north-east ; but they may be open to the south and south-west. Cold and dry air is productive of inflammatory pulmonic complaints, pleurisies, &c. Cold and moist air causes intermittents ; warmth, or heat and moisture, occasion putrid diseases.



F I N I S.

